



# Response to Review of Planning Proposal – Ecological Matters

**Cudgen Connection, 741 Cudgen Road, Cudgen NSW**

**Cudgen Health Precinct Pty Ltd**

Prepared by:

**SLR Consulting Australia Pty Ltd**

SLR Project No.: 620.042770.00001

Cumberland Ecology Project No.: 22050

24 October 2025

Revision: Final

## Revision Record

| Revision | Date                                   | Prepared By  | Checked By   | Authorised By |
|----------|----------------------------------------|--------------|--------------|---------------|
| 01       | 15 October 2025                        | Trevor Meers | Tim Playford |               |
| 02       | 24 October 2025                        | Trevor Meers |              | Trevor Meers  |
|          | <a href="#">Click to enter a date.</a> |              |              |               |

## Basis of Report

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Cudgen Health Precinct (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

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## Table of Contents

|                                                                |           |
|----------------------------------------------------------------|-----------|
| <b>Basis of Report .....</b>                                   | <b>i</b>  |
| <b>1.0 Introduction .....</b>                                  | <b>1</b>  |
| 1.1 Summary of Letter from Stakeholders .....                  | 1         |
| 1.1.1 Tweed Shire Council .....                                | 1         |
| 1.1.2 Department of Planning, Housing and Infrastructure ..... | 2         |
| 1.2 Rezoning Requirements .....                                | 2         |
| 1.2.1 Rezoning Requirements .....                              | 2         |
| 1.2.2 HEV Mapping .....                                        | 3         |
| <b>2.0 Rezoning Criteria.....</b>                              | <b>3</b>  |
| <b>3.0 HEV Mapping .....</b>                                   | <b>4</b>  |
| 3.1 Key Threatened Species Habitat .....                       | 5         |
| 3.1.1 Core Koala Habitat .....                                 | 6         |
| 3.1.2 Mitchell's Rainforest Snail .....                        | 8         |
| 3.2 Summary of HEV Mapping .....                               | 9         |
| <b>4.0 Response to Specific Items .....</b>                    | <b>17</b> |
| 4.1 Tweed Shire .....                                          | 17        |
| 4.2 Department of Planning, Housing and Infrastructure .....   | 20        |
| <b>5.0 Conclusion.....</b>                                     | <b>22</b> |

## Tables

|                                                          |   |
|----------------------------------------------------------|---|
| Table 1 E2 and E3 Zone Criteria .....                    | 3 |
| Table 2 HEV Criteria and how they Apply to the Site..... | 4 |

## Figures

|                                                               |    |
|---------------------------------------------------------------|----|
| Figure 1: Biodiversity Values Mapping .....                   | 10 |
| Figure 2: Over-cleared Vegetation Types .....                 | 11 |
| Figure 3: Threatened Ecological Communities .....             | 12 |
| Figure 4: Rainforest Vegetation .....                         | 13 |
| Figure 5: Koala Records for the Locality since 1990 .....     | 14 |
| Figure 6: Mitchell's Rainforest Snail Records since 1990..... | 15 |
| Figure 7: High Ecological Value Mapping for the Site .....    | 16 |



## Appendices

### Appendix A      Likelihood of Occurrence Tables



## 1.0 Introduction

This report has been prepared in relation to the application for rezoning (the planning proposal) of land located at 741 Cudgen Road, Cudgen, NSW (the site). Cumberland Ecology (now operating as part of SLR Consulting Pty Ltd) prepared a Baseline Ecological Assessment Report (BEAR) to support the planning proposal (Report No. 22050 RP2, dated 23 November 2023).

Two letters from relevant stakeholders requesting further information in regard to the planning proposal have been received:

- Planning Proposals Post-submission Cudgen Connection from Tweed Shire Council dated 5 September 2025; and
- RE: Planning Proposal for Cudgen Connection, 741 Cudgen Road, Cudgen (PP-2033-2669) from the Department of Planning, Housing and Infrastructure dated 19 August 2025.

The above letters include a range of responses and recommendations, including some recommendations in regard to ecological matters. Of particular note, both letters recommend that High Ecological Value (HEV) land be identified. Although the BEAR prepared by Cumberland Ecology included mapping of ecological values relevant to HEV, it did not specifically identify and map HEV.

As such, the purpose of this report is to map and detail the HEV land present within the site, and to provide a response and/or further information in regard to relevant items in the letters, in particular where this information is not already provided in the BEAR.

## 1.1 Summary of Letter from Stakeholders

### 1.1.1 Tweed Shire Council

The letter from Tweed Shire Council (Council) (hereafter referred to as the response from Council) contains the following recommendations in regard to ecology:

- *‘Recommendation 10: That the Planning Proposal be updated to identify High Ecological Value land.*
- *Recommendation 11: That a buffer of 50 metres from the adjacent SEPP Coastal Wetlands and other HEV vegetation be applied, as per Figure 1.*
- *Recommendation 12: Amend the Planning Proposal to address inconsistency with Planning Directions 3.1 and 3.4 as they relate to biodiversity and conservation to apply a C2 Environmental Conservation Zone is applied to the land identified as High Environmental Value as per Figure 1.*
- *Recommendation 13: That the Planning Proposal be amended to address inconsistency with Planning Direction 4.2 to apply an ecological buffer consistent with Figure 1.’*

Further separate recommendations are made in Item 4 of an earlier letter included as an attachment to the letter from Council. Item 4 is titled – Further ecological survey and assessment and recommends:

*‘Targeted field survey in accordance with Biodiversity and Assessment Methodology 2020 (2020 State of NSW and Department of Planning, Industry and Environment) should be carried out within the study area for the following fauna species considered to have a moderate to high likelihood of occurrence within the study area:*



- *Mitchells Rainforest Snail (Thersites mitchellae)*
- *Three-toed Snake-Tooth Skink (Coeranoscincus reticulatus)*
- *Pale-vented Bush-hen (Amaurornis moluccana)*
- *Wallum Froglet (Crinia tinnula)*

*Where threatened species are recorded, individuals and associated fauna habitat polygons to a minimum distance of 20 metres from any record (consistent with DCP A19) should be included as C2 – Environmental Zone land.*

*Any additional threatened flora and fauna species recorded during further survey effort should be subject to an assessment of significance (5-part test) under the Biodiversity Conservation Act 2016.'*

### **1.1.2 Department of Planning, Housing and Infrastructure**

The letter from the Department of Planning, Housing and Infrastructure details that the Conservation Programs, Heritage and Regulation Group (CPHR) of the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) (hereafter referred to as the response from NSW DCCEEW) has recommendations in regards to biodiversity matters. CPHR recommend:

1. *'The proponent identifies and maps High Environmental Value (HEV) land in the planning area in accordance with the approach set out at Attachment 2 of the letter.*
2. *Any HEV land identified in the planning area be incorporated into an appropriate conservation zone in the future planning proposal, after consideration of the Northern Council's E Zone Review Final Recommendations.*
3. *As part of the future planning proposal, an appropriate minimum lot size be imposed on HEV land in the planning area, or other planning mechanism, to avoid future subdivision and the creation of inappropriate dwelling entitlements on such land.*
4. *The planning authority considers requiring a planning agreement, or an alternative planning mechanism, that commits the landholder to the preparation and implementation of a Biodiversity and Vegetation Management Plan (BVMP) to manage all conservation zoned land in the planning area, with the BVMP to be lodged with the first development application for the planning area following rezoning.'*

## **1.2 Rezoning Requirements**

Rezoning requirements are detailed in the Northern Councils E Zone Review – Final Recommendations Report, and in Regional Plan and Local Planning Directions, while the criteria for HEV mapping are detailed in the North Coast Regional Plan 2041.

### **1.2.1 Rezoning Requirements**

The rezoning requirements are detailed in the Northern Councils E Zone Review – Final Recommendations Report. These are reproduced in Table 1 below.

The E2 Zone replaces the C2 Environmental Conservation Zone, and the E3 Zone replaces the Environmental Management Zone as defined in the Tweed Local Environmental Plan 2014. The Tweed Local Environmental Plan 2014 details what forms of development are permissible in these areas.



**Table 1 E2 and E3 Zone Criteria**

| E2 Zone Criteria                                                                                                                                                                                                                                                           | E3 Zone Criteria                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| SEPP 26 Littoral rainforests (replaced by SEPP Resilience and Hazards 2021)                                                                                                                                                                                                | Riparian vegetation and wetlands           |
| SEPP 14 Coastal Wetlands (replaced by SEPP Resilience and Hazards 2021)                                                                                                                                                                                                    | Rare, vulnerable and endangered ecosystems |
| Endangered Ecological Communities under Communities (EECs) listed the <i>Threatened Species Conservation Act 1995</i> (replaced by the <i>Biodiversity Conservation Act 2016</i> ) and the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) | Native vegetation on coastal foreshores    |
| Key Threatened Species Habitat                                                                                                                                                                                                                                             | Riparian vegetation and wetlands           |
| Over cleared communities and landscapes                                                                                                                                                                                                                                    |                                            |
| Culturally significant lands                                                                                                                                                                                                                                               |                                            |

### 1.2.2 HEV Mapping

The North Coast Regional Plan 2041 criteria for HEV Mapping are:

- land with high biodiversity value that is particularly sensitive to impacts from development and clearing (as shown on the NSW Government's Biodiversity Values map);
- native vegetation of high conservation value, including vegetation types that have been over cleared or occur within over cleared landscapes, threatened ecological communities, old growth forest and rainforest;
- key habitat of threatened species;
- important wetlands, estuaries and lakes; and
- areas of geological significance.

## 2.0 Rezoning Criteria

The rezoning requirements are detailed in the Northern Councils E Zone Review – Final Recommendations Report. Each of the criteria was assessed in Section 4.3.2 of the BEAR. Given the previous assessment in the BEAR, no further assessment is provided here.



### 3.0 HEV Mapping

Details of how HEV Mapping applies to the site has not previously been provided. As such, a summary of the HEV values within the site is provided in **Table 1** below. These are shown on the HEV land mapped on **Figure 7**.

**Table 2 HEV Criteria and how they Apply to the Site**

| HEV Criteria                                                                                                                                                                                                                                                                                                                      | Applicability to Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Land with high biodiversity value that is particularly sensitive to impacts from development and clearing (as shown on the NSW Government's Biodiversity Values map)                                                                                                                                                              | Land on the Biodiversity Values map borders the far northeast of the site as shown in <b>Figure 1</b> . The Biodiversity Values Mapping does not extend into the site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Native vegetation of high conservation value, including vegetation types that have been over cleared or occur within over cleared landscapes, threatened ecological communities, old growth forest and rainforest                                                                                                                 | <p>The following native vegetation of high conservation value was identified on the site as detailed in the BEAR:</p> <p>Over cleared vegetation types: PCT 3004 and PCT 3987 are more than 70% cleared. Over cleared vegetation types are shown on <b>Figure 2</b>.</p> <p>The site is within the Lamington Volcanics NSW (Mitchell) Landscape which is 57% cleared and is not an over cleared NSW (Mitchell) Landscape.</p> <p>Threatened Ecological Communities (TECs) listed under the NSW <i>Biodiversity Conservation Act 2016</i> (BC Act) are present within the site with PCT 3004 being a degraded/regrowth form of Lowland Rainforest TEC. Although PCT 3987 aligns with Swamp Oak Floodplain Forest TEC, it does not occur on a floodplain and as such does not align with this TEC. TECs are shown on <b>Figure 3</b>.</p> <p>No old growth forest is present in the site with all native vegetation being recent regrowth.</p> <p>Rainforest (weedy regrowth of PCT 3004) is present on the northern edge of the site and is shown on <b>Figure 4</b>.</p> |
| <p>Key habitat of threatened species. Key habitat includes:</p> <ul style="list-style-type: none"> <li>-Key breeding habitats with known breeding occurrence</li> <li>-Core Koala Habitat</li> <li>-Habitat for known populations of species-credit-species and SAI entities</li> </ul> <p>Key habitats for migratory species</p> | <p>Surveys undertaken to inform the BEAR did not detect key habitat for threatened species. However there are records of threatened species in close proximity to the site. These are reviewed and discussed further in Section 3.1.1 below.</p> <p>Although preferred Koala habitat as defined by the Tweed Coast Koala Plan of Management is present in the site, this does not meet the definition of Core Koala habitat as discussed in Section 3.1.1 below.</p> <p>A population of one SAI entity the Mitchell's Rainforest Snail occurs in adjacent areas. This species is discussed in Section 3.1.2.</p> <p>No key habitat for migratory species is present, the site is not located on an estuary and does not contain coastal wetlands that would provide habitat for migratory species.</p>                                                                                                                                                                                                                                                                   |
| Important wetlands, estuaries and lakes                                                                                                                                                                                                                                                                                           | The closest Nationally Important Wetland in the Directory of Important Wetlands is Ukerebagh Nature Reserve. The nature reserve covers 150 ha and includes Ukerebagh Island and part of the adjacent mainland. The island sits near the junction of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



| HEV Criteria                     | Applicability to Site                                                                                                                                                                                                                                                                              |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | Tweed River and Terranora Creek within the Tweed River estuary. Ukerebagh Nature Reserve is located approximately 8 km north of the site.<br>No Vulnerable Estuaries and Intermittently Opening and Closing Lakes and Lagoons (ICOLLs) are present on the site or within a 5km radius of the site. |
| Areas of geological significance | No areas of geological significance are present in the site                                                                                                                                                                                                                                        |

### 3.1 Key Threatened Species Habitat

No threatened flora species were detected in the site during surveys for the BEAR. No threatened flora species were considered likely to be present within the site due to the highly degraded nature of the site.

A number of threatened fauna species have been recorded in surveys of adjacent land. These studies are summarised below.

A Fauna Assessment by Kendall (2007) was based on surveys between 2003 and 2006 for adjacent Gales land holdings. The following threatened species were detected:

- Pale-vented Bush-hen (*Amaurornis moluccana*) (BC Act Vulnerable);
- Bush-Stone Curlew (*Burhinus grallarius*) (BC Act Endangered);
- Common Planigale (*Planigale maculata*) (BC Act Vulnerable);
- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*) (BC Act Vulnerable);
- Glossy Black Cockatoo (south-eastern) (*Calyptorhynchus lathami lathami*) (BC Act and EPBC Act Vulnerable);
- Grey-headed Flying Fox (*Pteropus poliocephalus*) (EPBC Act and BC Act Vulnerable);
- Latham's Snipe (*Gallinago hardwickii*) (BC Act Vulnerable and EPBC Act Migratory);
- Little Bent-wing Bat (*Miniopterus australis*) (BC Act Vulnerable);
- Mitchell's Rainforest Snail (*Thersites mitchellae*) (BC Act and EPBC Act Critically Endangered);
- Northern Free-tailed Bat (*Ozimops lumsdenae*) (BC Act Vulnerable);
- Southern Myotis (*Myotis macropus*) (BC Act Vulnerable) (and
- Wallum Froglet (*Crinia tinnula*) (BC Act Vulnerable).

A Biodiversity Certification Assessment Report (BCAR) prepared by Ecoplaning (2023) for adjacent Gales land holdings detected several species that are ecosystem credit species. The surveys for this BCAR included adjacent areas including land to the immediate north. Threatened species detected included:

- Southern Myotis (*Myotis macropus*) (BC Act Vulnerable);
- Common Planigale (*Planigale maculata*) (BC Act Vulnerable); and
- Bush Stone-curlew (*Burhinus grallarius*) (BC Act Endangered).



More recent surveys of Gales land holdings for a Wallum Froglet Habitat Rehabilitation Assessment (Ecoplanning 2024) have identified a single record of the Wallum Froglet (*Crinia tinnula*) on Gales land holdings approximately 750 m northwest of the site. This record is located in *Melaleuca quinquenervia* dominated open forest, which is not present in the site. Given the absence of suitable habitat this species is considered unlikely to be present in the site.

The BDAR for the Tweed Valley Hospital site (Greencap 2019) assumed presence of two fauna species (but did not detect these species) based on suitable habitat being present, being:

- Powerful Owl (*Ninox stenua*) (BC Act Vulnerable); and
- Three-toed Snake-tooth Skink (*Coeranoscincus reticulatus*) (BC Act and EPBC Act Vulnerable).

Cumberland Ecology (2025) observed the White-bellied Sea Eagle (*Haliaeetus leucogaster*) flying overhead above Turnock Street, approximately 1.25 km northwest of the site.

The letter from Tweed Shire Council indicates that the following threatened fauna species are considered to have a moderate to high likelihood of occurrence within the site:

- Mitchells Rainforest Snail (*Thersites mitchellae*);
- Three-toed Snake-Tooth Skink (*Coeranoscincus reticulatus*);
- Pale-vented Bush-hen (*Amauornis moluccana*); and
- Wallum Froglet (*Crinia tinnula*).

It is noted that key habitat for threatened species is:

- Key breeding habitat that supports known breeding occurrence;
- Habitat for known populations of species-credit-species and SAI entities; and
- Key habitat for Migratory species.

As such foraging habitat for species credit species within the site is not considered to be key habitat. An assessment of whether the site is likely to provide key habitat for the above species, plus any additional threatened species from a 5 km radius of the site in the NSW BioNet Atlas is provided in **Appendix A**. This assessment indicates that the small area of fragmented, weedy rainforest regrowth on the northern boundary of the site has potential to be marginal breeding habitat for a number of threatened species. Derelict sheds and buildings within the site also provide marginal breeding habitat for threatened bat species. However, as these structures are not associated with native vegetation communities, they are not considered to be HEV land.

One species in particular note is the Mitchell's Rainforest Snail (*Thersites mitchellae*) for which there are records to the immediate north of the site. This species is listed as critically endangered under both the BC Act and EPBC Act and is a Serious and Irreversible Impact (SAII) candidate species. The potential for this species to be present in the site is discussed in **Section 3.1.2**.

### 3.1.1 Core Koala Habitat

Core Koala Habitat has a range of definitions depending on the relevant documentation.

Core Koala Habitat is defined under the Tweed Coast Comprehensive Koala Plan of Management 2020 (Tweed Coast CKPoM) in Section 3.4 as:

- a) "an area of land where koalas are present, or



- b) an area of land
  - i. which has been assessed by a suitably qualified and experienced person in accordance with the Guideline as being highly suitable koala habitat, and
  - ii. where koalas have been recorded as being present in the previous 18 years.”

A different definition is provided in the Definitions in the Tweed Coast CKPoM being:

*‘Core Koala Habitat is defined under the former SEPP 44 as an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population. For the purposes of this Plan, Core Koala Habitat includes Preferred Koala Habitat within a KAP or KLP plus any land (whether in a KAP or KLP or not) where koalas are present. See Part 3.4 for further discussion related to the definition of Core Koala Habitat.’*

These definitions differ to the definition of Core Koala Habitat in the currently applicable State Environmental Planning Policy (Koala Habitat Protection) 2021 now included in the State Environmental Policy (Biodiversity and Conservation) 2021 being:

- a) *‘an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or*
- b) *an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years’*

The site is not considered to be highly suitable Koala habitat as it only consists of small areas of Secondary (Class B) Koala habitat and does not contain preferred Koala food trees as defined by Tweed Coast Koala Habitat Study (Phillips et al. 2011).

A review of records of Koala records in the vicinity of the site was undertaken to determine if the Koala has been recorded in the last 18 years. These records are summarised below.

### 3.1.1.1 BioNet Koala Records

The NSW BioNet database (E&H 2025a) indicates that there are 258 post 1980 records of Koala within a 5 km radius of the site (the locality). Records are shown in **Figure 5**. The majority of these records are associated with Koala populations at Kings Forest (i.e. a metapopulation mapped by Tweed Shire Council). There is one recent record from Turnock Street, and two records from near the Kingscliff Library west of the site. The record from Turnock Street has a 500 m accuracy, meaning that this location is indicative only.

### 3.1.1.2 Studies in Adjacent Areas

Extensive Koala surveys have been conducted by Ecoplanning between 2020 and 2025 covering adjacent Gales land-holdings (north and east of the site, including the land directly to the north) (Ecoplanning, unpublished data). The survey methods have included:

- Infra-red cameras;
- Surveys following the Spot Assessment Technique (SAT);
- Spotlighting; and
- Survey by an accredited Koala sniffer dog.



The SAT surveys were concentrated on woody vegetation likely to support Koalas with no surveys undertaken in treeless vegetation. No evidence of Koalas was detected in any of these surveys.

The Biodiversity Development Assessment Report (BDAR) for the Tweed Valley Hospital located directly east of the site (Greencap 2019) details Koala surveys undertaken in 2018 including SAT surveys and nocturnal spotlighting. The Koala was not detected in these surveys.

Cumberland Ecology (2025) undertook SAT surveys in May 2025 (total of nine SAT surveys) on Gales land holdings north and west of Turnock Street located approximately 1 km west of the site. The Koala was not detected in these surveys.

### 3.1.1.3 Summary

All land to the north and east of the site has been recently surveyed for Koalas and the Koala has not been detected in any of these surveys. The remaining land to the west and south is either residential land or cleared agricultural land, that is not likely to support the Koala.

Although there are some BioNet Atlas records from around the site, the site is not considered 'highly suitable Koala habitat' containing only a small area (0.05 ha) of Secondary (Class B) Koala habitat that does not contain preferred Koala food trees. As such the vegetation within the site is not Core Koala Habitat based on the definition in State Environmental Planning Policy (Koala Habitat Protection) 2021 and according to Part 3.4 of the Tweed Coast CKPoM it is not considered that the site contains Core Koala Habitat.

### 3.1.2 Mitchell's Rainforest Snail

Records in the NSW BioNet Atlas of the Mitchell's Rainforest Snail since 1990 surrounding the site are shown in **Figure 6**. Of particular note is a cluster of records from Gales land holdings to the north of the site, with the closest record to the immediate north of the site within the study area from the BEAR. These records are from prior to 2010.

Mitchell's Rainforest Snail and its habitat is present within a Mitchell's Rainforest Snail Covenant Area set up by Gales near Quigan Street. This area is detailed in the Management Plan for the Conservation of Mitchell's Rainforest Snail (*Thersites mitchellae*) on Part of Lot 13 DP871753, Kingscliff, New South Wales (Stanisic 2015).

The Biodiversity Development Assessment Report (BDAR) for the Tweed Valley Hospital (Greencap 2019) details surveys undertaken in 2018 and 2019 for Mitchell's Rainforest Snail. These surveys identified four living snails and six shells. These records were located between the Tweed Valley Hospital site and the roundabout at the intersection of Turnock Street and Elrond Avenue in paperbark swamp forest and subtropical rainforest.

There are several other records within the BioNet Atlas that are not included in reports available to SLR. The records since 2020 include:

- Two records along the main drain north of the Tweed Valley Hospital;
- Five records along Elrond Drive, near the Kingscliff Library; and
- Two records near Pearl Avenue, Kingscliff.

According to the Conservation Advice for the Mitchell's Rainforest Snail (Threatened Species Scientific Committee 2016) preferred habitat for this species at lower altitudes are areas of lowland subtropical rainforest and swamp sclerophyll forest on alluvial soils. On higher ground the species occurs around the edges of wetlands with an overstorey of palms and fig trees. During periods of activity, Mitchell's Rainforest Snail is typically found amongst leaf



litter on the forest floor, and occasionally under the bark of trees. Individuals select microhabitats in which to retreat during the day such as *Gahnia clarkei* (tall saw-sedge) in rainforest and *Melaleuca quinquenervia* wetland. The species also shelters within litter in palm fronds in *Archontophoenix cunninghamiana* (Bangalow Palm) forest, and in coarse woody debris in all habitats. Key habitat components for Mitchell's Rainforest Snail are a well-developed leaf litter layer (providing food, shelter and breeding sites) and an intact forest canopy (maintaining a moist microclimate and providing a source of leaf litter).

The patch of rainforest regrowth within the site is considered to be marginal habitat for the Mitchell's Rainforest Snail. There is moderate litter cover (44% cover measured in five 1 x 1 m quadrats, in surveys to inform the BEAR) but limited coarse woody debris. This narrow strip of rainforest regrowth has been separated from other historical records on Gales land holdings to the north by areas that have been maintained through slashing by Gales. As detailed in Section 4.2.5 of the BEAR the Gales land holdings have been subject to a range of hydrological changes as a result of the artificial drains in the area. These changes resulted in the replacement of sedgelands with exotic grasslands, that are managed through slashing. As such, the areas now maintained through slashing are considered unlikely to be suitable habitat for the Mitchell's Rainforest Snail. As such, the area of PCT 3004 regrowth within the site is considered to be at best very marginal habitat. However, in the absence of recent targeted surveys of this area, this cannot be determined for certain. For the purpose of HEV Mapping this area is considered to be Key habitat for Mitchell's Rainforest Snail.

All other areas of vegetation within the site are not considered to be suitable habitat. They are neither rainforest nor *Melaleuca quinquenervia* wetland. These vegetation fragments are degraded and do not have a well-developed litter layer.

### 3.2 Summary of HEV Mapping

The total area that corresponds to HEV is shown in **Figure 7**. This includes a small strip of rainforest regrowth on the northern boundary of the site, and a separate small patch of rainforest regrowth consisting of a *Cupaniopsis anacardioides* tree on the eastern boundary of the site. In addition, there is a small, isolated patch of PCT 3987 in the form of regrowth of *Casuarina glauca*.





FIGURE 1

- LEGEND**
- The Site
  - Cadastre
  - Biodiversity Values Map

Biodiversity Values Map © State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water 2018  
DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

0 65 130 m  
Coordinate System: GDA 1994 MGA Zone 56  
Scale: 1:3,500 at A3  
Project Number: 620.042770.00001  
Date Drawn: 13-Oct-2025  
Drawn by: JL

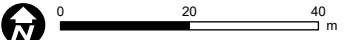


OVERCLEARED VEGETATION  
TYPES

FIGURE 2

- LEGEND**
- The Site
  - Overcleared Vegetation Types**
    - PCT 3004: Far North
    - Bangalow Palm Swamp Forest (Regrowth)
    - PCT 3987: Far North
    - Floodplain Swamp Oak Paperbark Forest

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Coordinate System: GDA 1994 MGA Zone 56

Scale: 1:1,172 at A3

Project Number: 620.042770.00001

Date Drawn: 13-Oct-2025

Drawn by: JL



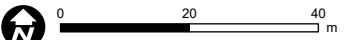


FIGURE 3

LEGEND

-  The Site
- Threatened Ecological Community**
-  Lowland Rainforest

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Coordinate System: GDA 1994 MGA Zone 56

Scale: 1:1,172 at A3

Project Number: 620.042770.00001

Date Drawn: 13-Oct-2025

Drawn by: JL



FIGURE 4

- LEGEND**
- The Site
  - Rainforest Vegetation**
    - PCT 3004: Far North
    - Bangalow Palm Swamp Forest (Regrowth)

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.

|                                                                                       |                      |    |    |   |
|---------------------------------------------------------------------------------------|----------------------|----|----|---|
|  | 0                    | 20 | 40 | m |
| Coordinate System:                                                                    | GDA 1994 MGA Zone 56 |    |    |   |
| Scale:                                                                                | 1:1,172 at A3        |    |    |   |
| Project Number:                                                                       | 620.042770.00001     |    |    |   |
| Date Drawn:                                                                           | 13-Oct-2025          |    |    |   |
| Drawn by:                                                                             | JL                   |    |    |   |

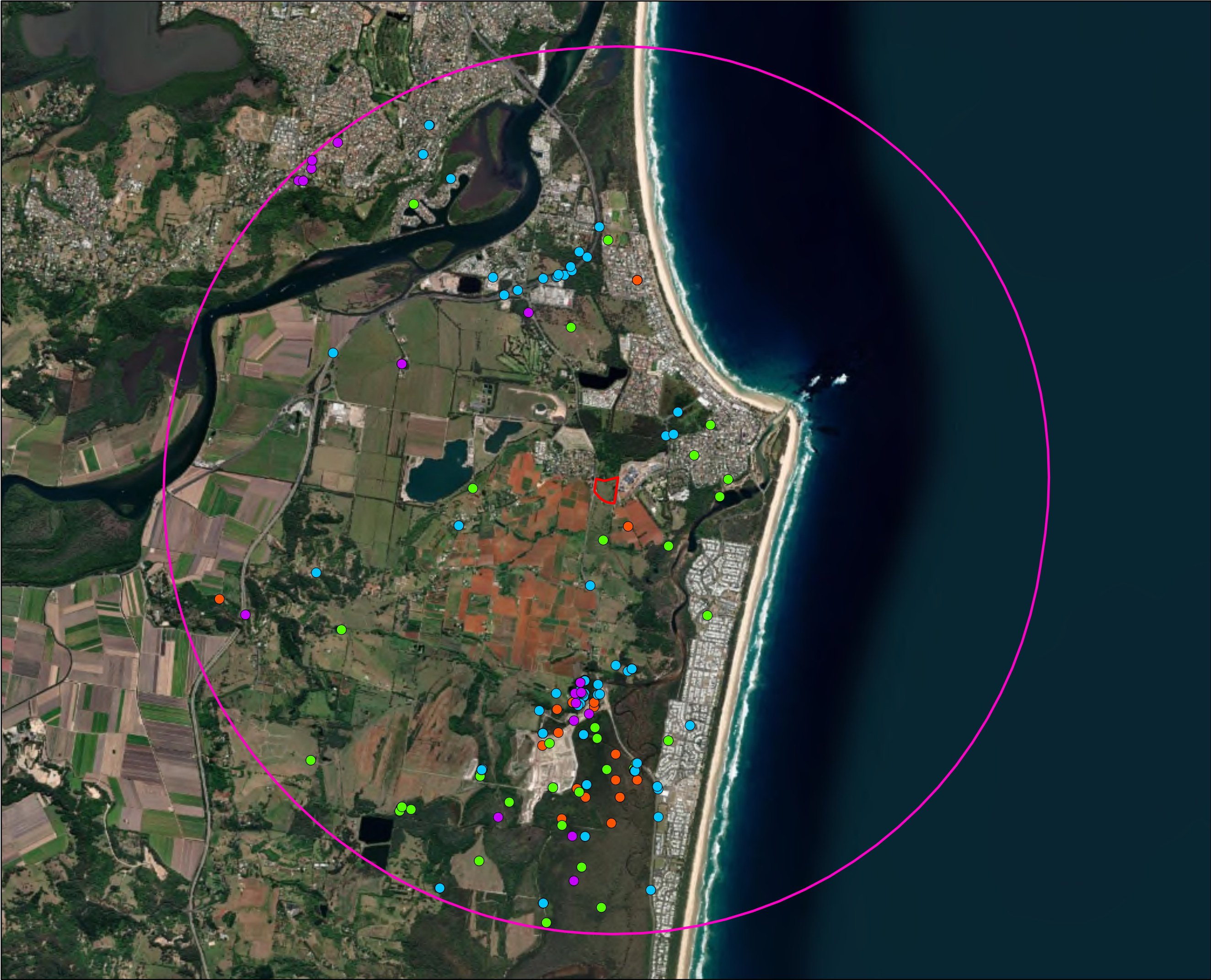


FIGURE 5

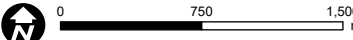
LEGEND

- The Site
- Locality (5 km)

Koala Records

- 1990-1999
- 2000-2009
- 2010-2019
- 2020-Present

BioNet Atlas of NSW Wildlife © NSW Government dated 13/10/2025  
DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 56

Scale: 1:40,129 at A3

Project Number: 620.042770.00001

Date Drawn: 13-Oct-2025

Drawn by: JL





FIGURE 6

- LEGEND**
- The Site
  - Mitchells Rainforest Snail**
    - 2000-2009
    - 2010-2019
    - 2020-Present

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|                                                                                       |                      |     |     |
|---------------------------------------------------------------------------------------|----------------------|-----|-----|
|  | 0                    | 115 | 230 |
| m                                                                                     |                      |     |     |
| Coordinate System:                                                                    | GDA 1994 MGA Zone 56 |     |     |
| Scale:                                                                                | 1:5,993 at A3        |     |     |
| Project Number:                                                                       | 620.042770.00001     |     |     |
| Date Drawn:                                                                           | 14-Oct-2025          |     |     |
| Drawn by:                                                                             | JL                   |     |     |

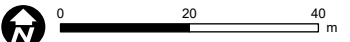


FIGURE 7

LEGEND

-  The Site
-  High Ecological Value Land

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 56

Scale: 1:1,172 at A3

Project Number: 620.042770.00001

Date Drawn: 13-Oct-2025

Drawn by: JL



## 4.0 Response to Specific Items

### 4.1 Tweed Shire

#### 4.1.1.1 Buffers

The response from Council includes the following recommendation:

- *Recommendation 11: That a buffer of 50 metres from the adjacent SEPP Coastal Wetlands and other HEV vegetation be applied, as per Figure 1.*

Further to this the following response is provided under the heading 'Biodiversity and other ecological values':

*The proposed land use zone as shown on Dwg. No. J7594\_100 Rev. 01 Land Use Zoning – Cudgen Connection dated 22/11/2023 prepared by Planit Consulting should be amended to include a C2 – Environmental Zone to the north of the site. The alignment of the C2 – Environmental Zone should generally reflect that shown on the marked-up plan – Figure 1 below, based on the 'Baseline Ecological Assessment Report (BEAR 2023) dated 23 November 2023 prepared by Cumberland Ecology – Figure 13 Setbacks required under Section A19 of the Tweed Shire DCP'. The C2 - Environmental Zone should capture the following values and ecological setbacks:*

- a. Endangered Ecological Community (EEC) listed under the Biodiversity Conservation Act 2016 being Lowland Rainforest of the NSW North Coast and Sydney Basin Bioregions and Lowland Rainforest on Floodplain in the NSW North Coast Bioregion where occurring on the subject site identified as PCT 3004: Far North Bangalow Palm Swamp Forest (Regrowth) in the BEAR 2023*
- b. 30 metre wide ecological buffer consistent with Tweed Development Control Plan Section A19 Biodiversity and Habitat Management to EEC identified as PCT 3004: Far North Bangalow Palm Swamp Forest (Regrowth) in the BEAR 2023 on and adjacent to the subject site*
- c. Coastal Wetland Area as identified on the SEPP (Resilience and Hazards) 2021 coastal mapping.*

We note that the Northern Councils E Zone Review – Final Recommendations Report in detailing the criteria for E zones does not include any requirements for buffers/setbacks to be applied to E zones. Specifically, Section 3. Final Recommendations contains the following wording:

*The E zones will **not** include buffers to the vegetation attributes that meet the E zone criteria.*

As such any E zones should not include buffers. Further, it is understood that the setbacks in Section A.19 of the Tweed Development Control Plan (DCP) apply at the development application stage and do not apply to a rezoning application.

We further note that Section C6 to C8 of Section A.19 of the Tweed Shire DCP outlines where variations to red flagged areas may be permitted. These are detailed below:

*C.6 Minor variations to the red flagged areas may be considered to achieve practical outcomes. Some examples include:*

- *minor incursions into the ecological setbacks;*
- *ecological setbacks arising from adjoining land not in the same ownership;*



- *ecological setbacks that necessarily overlap with access roads or other linear infrastructure (e.g.) a narrow access road that does not require clearing with bushland on both sides);*
- *isolated patches of bushland with an area less than 1000m<sup>2</sup>;*
- *strips of bushland less than 10m wide;*
- *areas in low condition with an area less than 5000m<sup>2</sup>;*
- *bushland dominated by exotic species;*
- *Threatened or other significant fauna that are considered vagrant, highly nomadic or are not closely associated with habitat on the site;*
- *Threatened or other significant flora that occur as seedlings or saplings outside of bushland habitat;*
- *Secondary (class B) koala habitat without evidence of koala activity;*
- *Areas subject to a controlled activity approval under the Water Management Act 2000; and*
- *Stags and raptor nests where it is possible and feasible to relocate them nearby (note, this has only been proved successful for osprey).*

*C7. A minor variation referred to in C6 above must not:*

- *trigger a red flag in another biodiversity theme unless it also represents a variation for that theme; or*
- *conflict with any statutory consideration that would require the retention of the area.*

*C8. A development application seeking a variation referred to in C6 above must:*

- *Clearly identify the variation sought;*
- *Demonstrate that alternative layouts have been considered and that the impacts cannot reasonably be avoided; and*
- *Show how the variation impact is consistent with the relevant planning principles and objectives of the DCP.*

A number of these variations apply to vegetation within the site with many of the setbacks created from vegetation on adjacent properties not in the same ownership (i.e. Coastal Wetlands on Gales land holdings to the north). Specific grounds for variations in setbacks include:

- Bushland dominated by exotic species – applies to PCT 3004 regrowth and PCT 3987;
- Isolated areas of bushland with an area less than 1000m<sup>2</sup> – applies to PCT 3987 and one small area of PCT 3004 regrowth on the western edge of the site;
- areas in low condition with an area less than 5000m<sup>2</sup> - applies to PCT 3004 regrowth on the northern boundary of the site;



- ecological setbacks arising from adjoining land not in the same ownership – applies to areas mapped as Coastal Wetlands.

In order to verify that area of PCT 3004 regrowth is in low condition, the data from one plot surveyed for the BEAR was entered into the Biodiversity Assessment Method (BAM) calculator and compared against the benchmark for PCT 3004. Analysis of this plot data revealed the following:

- There were 26 introduced species and just 11 native species in the plot;
- Cover of High Threat Exotic weed species was 124.2% indicating dominance of weed species in all strata;
- No native ferns or forbs were present, with just one species of native grass and shrub present;
- Dominance of the canopy by a single native species, *Macaranga tanarius* (in addition to introduced weed species) which is a rainforest coloniser, with other rainforest tree species only present as seedlings;
- The vegetation integrity score was just 22.6 relative to a benchmark of 100.

Overall, this indicates that the vegetation is highly weedy growth in low condition that is dominated by serious environmental weed species such as *Ligustrum sinense*, *Cinnamomum camphora*, *Lantana camara* and many others. In the absence of the management of weeds, for example through management under a Vegetation Management Plan associated with future development, this area of regrowth will likely decline in quality due to weed invasion. Any buffers would also be invaded by weeds in the absence of management. As such, this vegetation (and the other small fragments) does not have the values that would require setbacks under Section A.19 of the Tweed DCP.

#### 4.1.1.2 Threatened Species Surveys

The response from Council also includes the following recommendation for threatened species surveys to be undertaken:

*'Targeted field survey in accordance with Biodiversity and Assessment Methodology 2020 (2020 State of NSW and Department of Planning, Industry and Environment) should be carried out within the study area for the following fauna species considered to have a moderate to high likelihood of occurrence within the study area:*

- *Mitchells Rainforest Snail (Thersites mitchellae)*
- *Three-toed Snake-Tooth Skink (Coeranoscincus reticulatus)*
- *Pale-vented Bush-hen (Amaurornis moluccana)*
- *Wallum Froglet (Crinia tinnula)*

*Where threatened species are recorded, individuals and associated fauna habitat polygons to a minimum distance of 20 metres from any record (consistent with DCP A19) should be included as C2 – Environmental Zone land.*

*Any additional threatened flora and fauna species recorded during further survey effort should be subject to an assessment of significance (5-part test) under the Biodiversity Conservation Act 2016.'*

Based on the assessment provided in **Appendix A**, only the Mitchells Rainforest Snail and Pale-vented Bush-hen are likely to be present within the site. For the Three-toed Snake-Tooth Skink there are no local records, while for the Wallum Froglet no wetland habitat is



present in the site. The Pale-vented Bush-hen is an ecosystem credit species, meaning that no surveys for this species are required under the Biodiversity Assessment Method. It is noted that any future development application would likely require preparation of a BDAR, and this would require the survey of all candidate species credit species. This includes the Mitchell's Rainforest Snail for which the area of rainforest regrowth is assumed to be marginal habitat.

## 4.2 Coastal Wetlands

Both the response from Council and NSW DCCEEW raised issues around the Proximity area to Coastal Wetlands as mapped under the State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP Resilience and Hazards). The Coastal Wetlands are mapped on Gales land holdings to the north of the site, with the Proximity area extending into the site.

The response from Council recommends that a 50 m buffer from Coastal Wetlands be included in an Environmental Conservation Zone. NSW DCCEEW require HEV mapping to include a 100m buffer on Coastal Wetlands and Littoral Rainforest areas as per the State Environmental Planning Policy (Resilience and Hazards) 2021'. This is despite the HEV criteria in the North Coast Regional Plan 2041 not including Coastal Wetlands. The specific criteria for 'Native vegetation of high conservation value' within the North Coast Regional Plan 2041 are 'Native vegetation of high conservation value, including vegetation types that have been over cleared or occur within over cleared landscapes, threatened ecological communities, old growth forest and rainforest'. This wording does not include Coastal Wetlands mapped under the SEPP Resilience and Hazards or the Proximity area. It is further noted that the majority of the vegetation within the Proximity area on the site is exotic grassland, and as such is not native vegetation, and as such would not meet the definition of Native vegetation of high conservation value', and as such could not be mapped as HEV.

Further to the above, as detailed in the BEAR, the area mapped as Coastal Wetlands under the SEPP Resilience and Hazards to the north of the site does not align with the values of coastal wetlands due to hydrological changes as a result of the construction and modification of artificial drains in the area as detailed in the assessment of Idyll Consultants (2020). However, as far as we are aware, the Coastal Wetland and Proximity area mapping has not been modified and as such the requirements under the SEPP Resilience and Hazards still apply. The Proximity area does not however require environmental zoning under the requirements of the Northern Councils E Zone Review – Final Recommendations Report. Any future development must however address the following requirement of the SEPP Resilience and Hazards for the Proximity area:

*'The consent authority must be satisfied that the proposed development will not significantly impact on:*

- *the biophysical, hydrological or ecological integrity of the adjacent coastal wetland; or*
- *the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland.'*

This is to be addressed at the development application stage and does not preclude development in the Proximity area.

## 4.3 NSW DCCEEW

### 4.3.1.1 Swamp Oak Floodplain Forest

The response from NSW DCCEEW also includes the following commentary in regard to the BEAR:



*The planning area also includes vegetation mapped as the Lowland Rainforest endangered ecological community (EEC) in the north. In addition, the patch of Far North Paperbark Swamp Oak Forest in the east of the planning area accords with the Swamp Oak Floodplain Forest EEC, despite having been excluded as such by the BEAR due to the soils and topography not being associated with the EEC.*

*Soils and topography are not diagnostic features for the EEC as per the NSW Threatened Species Scientific Committee's Guidelines for interpreting listing criteria for species, populations and ecological communities listed under the NSW Biodiversity Conservation Act 2016, which were published in June 2020. Both EECs are listed on the Biodiversity Conservation Act 2016.*

We have reviewed the aforementioned guidelines which relate to the interpretation of the Final Determination which provides the legal definition of the EEC. The Final Determination for Swamp Oak Floodplain Forest EEC (NSW Scientific Committee 2011) states:

*Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions is the name given to the ecological community associated with grey-black clay-loams and sandy loams, where the groundwater is saline or sub-saline, on waterlogged or periodically inundated flats, drainage lines, lake margins and estuarine fringes associated with coastal floodplains. Floodplains are level landform patterns on which there may be active erosion and aggradation by channelled and overbank stream flow with an average recurrence interval of 100 years or less (adapted from Speight 1990). Swamp Oak Floodplain Forest generally occurs below 20 m (rarely above 10 m) elevation in the NSW North Coast, Sydney Basin and South East Corner bioregions. Bioregions are defined in Thackway and Cresswell (1995). The structure of the community may vary from open forests to low woodlands, scrubs or reedlands with scattered trees. Typically these forests, woodlands, scrubs and reedlands form mosaics with other floodplain forest communities and treeless wetlands, and often they fringe treeless floodplain lagoons or wetlands with semi-permanent standing water.*

We note that the Final Determination includes clear wording around the EEC occurring on floodplains and associated soils and groundwater. Further the name of the EEC 'Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions' implies that this EEC is restricted to floodplains. The location of the small patch of PCT 3987 dominated by *Casuarina glauca* does not occur on a floodplain (or an area mapped as being flood prone) and occurs on red clay soils associated with a basalt plateau. As such we do not consider it to align with the EEC, despite the dominance of *Casuarina glauca*.

#### **4.3.1.2 Biodiversity Certification**

The response from NSW DCCEEW include recommendations for the management of HEV land, including the following recommendations:

*Step 3: Consider Biodiversity Certification.*

*Where suitable and in discussion with CPHR NE Branch proponents are to consider undertaking biodiversity certification of the entire lot in the planning area, preferably in conjunction with a Biodiversity Stewardship Agreement (BSA). Conferring biodiversity certification at the time of the Planning Proposal will negate the requirement for further biodiversity assessment and approvals under the Biodiversity Conservation Act 2016 when preparing development applications. This streamlined approach will achieve greater biodiversity outcomes, minimise costs and save time. Entering into a BSA has the potential to generate revenue for landholders to conserve their land.*

*Step 4: Where biodiversity certification is not feasible, apply appropriate planning mechanisms to protect HEV land.*



*Planning authorities are to protect HEV land by applying zones with strong conservation objectives and limited land use permissibility and intensity to HEV land, such as the C2 Environmental Conservation zone, and impose appropriate minimum lot sizes on HEV land to avoid future subdivision and the creation of inappropriate dwelling entitlements.*

It is noted that there is generally a minimum area required for a Biodiversity Stewardship Agreement. The small areas of HEV land within the site are highly unlikely to meet these minimum area requirements. As such it is highly unlikely that CPHR NE Branch or the Biodiversity Conservation Trust (BCT) would accept such a small area for a Biodiversity Stewardship Site. As such we do not consider that Biodiversity Certification would be appropriate or approved for the site. Rather, areas of vegetation to be retained and managed, such as the small strip of weedy rainforest regrowth on the northern boundary of the site, plus additional areas proposed to be revegetated should be managed through a Vegetation Management Plan (VMP) or similar. Ongoing protection areas of these areas can be ensured through a restrictive covenant under the *Conveyancing Act 1919*.

## 5.0 Conclusion

The assessment provided in this report provides a response to the letters from Council and NSW DCCEE and provides HEV mapping as requested by both parties. It is noted that a strip of low quality, weed infested rainforest regrowth meets criteria to be HEV land, as do two other small, isolated patches of vegetation, including a small area dominated by *Casuarina glauca*.

Beyond the low quality of existing vegetation, it is noted that the primary use of the land is not for conservation purposes. As per the Northern Councils E Zone Review – Final Recommendations Report:

- Conservation zones will only be applied if the primary use of the land is considered to be environmental conservation or environmental management.
- Conservation zones will not include buffers to the vegetation attributes that meet the zone criteria.

As a general principle, the use of multiple zones on a property should be minimised as far as possible.

Accordingly, we consider a better practical and conservation outcome would be achieved through weed management and revegetation under a VMP to enhance and extend the weedy rainforest regrowth on the northern edge of the site.

Sincerely,

**SLR Consulting Australia Pty Ltd**



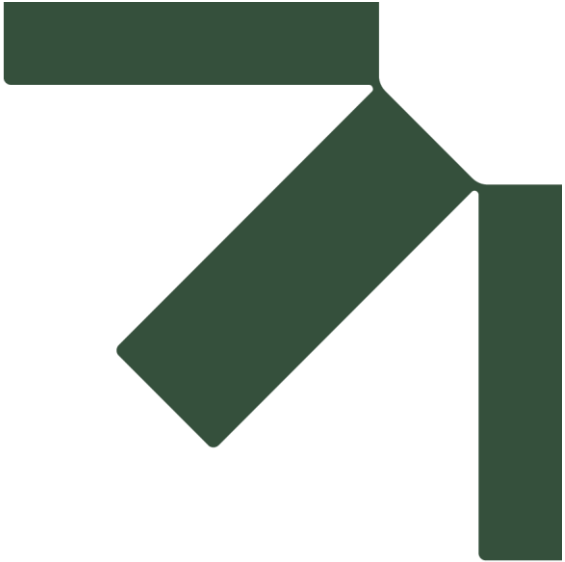
**Trevor Meers, PhD**  
Principal Ecologist



## 6.0 References

- Australian Environmental Surveys 2021. Kingscliff Gales Holdings Land and Associated Stormwater Flows E&H. 2025. BioNet Atlas. Environment, Energy and Science.
- Ecoplanning 2023. Biodiversity Certification Assessment Report. Gales Land Kingscliff. Gales-Kingscliff Masterplan. Prepared for Gales Holdings Kingscliff Pty Ltd. 22 August 2023 Version 2.1. Final draft for consultation.
- Ecoplanning 2024. Wallum Froglet Habitat Area Rehabilitation Assessment. Kingscliff NSW. Prepared for Gales Holdings Kingscliff Pty Ltd. 22 October 2024 Version 1.5 Final Update.
- Cumberland Ecology 2023. 741 Cudgen Road, Cudgen NSW. Baseline Ecological Report Assessment. 23 November 2023. Report No. 22050 RP3.
- Cumberland Ecology 2025. Koala Habitat Assessment Turnock Street, Kingscliff – Development Application for Haul Road, Earthworks involving Filling and Drainage Works and Change of Means of Transporting Material to an Approved Fill Site, Gales Kingscliff. June 2025.
- Cumberland Ecology 2025. Flora and Fauna Assessment Turnock Street, Kingscliff – Development Application for Haul Road, Earthworks involving Filling and Drainage Works and Change of Means of Transporting Material to an Approved Fill Site, Gales Kingscliff. May 2025. Draft
- Greencap 2019. Stage 2 SSD Biodiversity Development Assessment Report, Tweed Valley Hospital Health Infrastructure, August 2019.
- Idyll Space Environmental Consultants 2022a. Comparative assessment of the ecological value of vegetation on Gales southern holdings and its use for parklands and restoration. Prepared for Gales Kingscliff Pty Ltd.
- Idyll Space Environmental Consultants 2022a. Review of proposed development and parklands on SEPP Coastal wetland on Gales southern holdings, Kingscliff. Prepared for Gales Kingscliff Pty Ltd.
- Kendall K.R. 2007. Fauna of Gales Holdings, Lots 11, 12, 13, DP 871753, Lots 1-9 DP 781714, DP 21242, Lots 26C and 26D DP 10715, Lot 3 DP 828298 and Pt Lot 4 DP 727425 West Kingscliff. Kendall and Kendall Ecological Consultants Pty Ltd.
- NSW Government Planning and Environment 2015 Northern Councils E Zone Review Final Recommendations Report.
- NSW Dept. of Planning and Environment 2022. North Coast Regional Plan 2041. NSW Government.
- NSW Scientific Committee. 2011. Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions - profile. NSW Office of Environment and Heritage, Hurstville.
- NSW TSSC 2020. Guidelines for interpreting listing criteria for species, populations and ecological communities listed under the NSW Biodiversity Conservation Act 2016. Version 2.1.
- Phillips S., Hopkins, M, Shelton M 2011. Tweed Coast Koala Habitat Study. Report to Tweed Shire Council. January 2011. Biolink Ecological Consultants.
- Stanisic, J. 2015. Management Plan for the Conservation of Mitchell' Rainforest Snail (*Thersites mitchellae*) on Part of Lot 13 DP871753, Kingscliff, New South Wales. Prepared for Tweed Shire Council by Dr John Stanisic. Honary Research Fellow, Queensland Museum.
- Threatened Species Scientific Committee (2016). Conservation Advice *Thersites mitchellae* Mitchell's rainforest snail. Canberra: Department of the Environment and Energy. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/66774-conservation-advice-16122016.pdf>. In effect under the EPBC Act from 16-Dec-2016.
- Tweed Shire Council 2020. Tweed Coast Comprehensive Koala Plan of Management March 2020. Tweed Shire Council Murwillumbah NSW.





# **Appendix A    Assessment of Key Habitat**

## **Response to Review of Planning Proposal – Ecological Matters**

**Cudgen Connection, 741 Cudgen Road, Cudgen NSW**

**Cudgen Health Precinct Pty Ltd**

SLR Project No.: 620.042770.00001

24 October 2025

**Table A-1: Assessment of Key Habitat for Threatened Fauna Species with Records within a 5km Radius of the Site**

| Scientific Name                   | Common Name                  | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                | Key Habitat Present                                                                        |
|-----------------------------------|------------------------------|---------------|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <i>Crinia tinnula</i>             | Wallum Froglet               | V             |                 | 204                  | Occurs in various habitats, usually associated with acidic swamps on coastal sand plains. Found in sedge lands and wet heath lands and along drainage lines within other vegetation communities and disturbed areas, and occasionally in swamp sclerophyll forests. | No wetland habitat present in the site                                                     |
| <i>Litoria olongburensis</i>      | Olongburra Frog              | V             | V               | 2                    | Occurs in coastal wallum swamps in acidic pH (2.8-5.5) soils of these wetlands.                                                                                                                                                                                     | Unlikely, no adjacent records and no habitat present within the site                       |
| <i>Coeranoscincus reticulatus</i> | Three-toed Snake-tooth Skink | V             | V               | 0                    | Occurs in subtropical rainforest, wet sclerophyll forest, and montane forest on rich dark soils on the coast and adjacent ranges; some coastal/island populations (Fraser Island and Cooloola) occur on pale sands in lowlands.                                     | Unlikely. Although a small area of marginal habitat is present there are no local records. |
| <i>Circus assimilis</i>           | Spotted Harrier              | V             |                 | 2                    | The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats  | Unlikely due to lack of records. No suitable nests observed in the site                    |



| Scientific Name               | Common Name             | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                        | Key Habitat Present                                                                        |
|-------------------------------|-------------------------|---------------|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                               |                         |               |                 |                      | including edges of inland wetlands.                                                                                                                                                                                                                                                         |                                                                                            |
| <i>Haliaeetus leucogaster</i> | White-bellied Sea-Eagle | V             |                 | 113                  | Found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands.                                                                                                       | Likely to fly overhead but no breeding habitat is present                                  |
| <i>Hieraaetus morphnoides</i> | Little Eagle            | V             |                 | 2                    | Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.                                               | Unlikely, as limited local records. Could forage above the site, but no nests are present. |
| <i>Pandion cristatus</i>      | Eastern Osprey          | V             |                 | 336                  | Found at coastal areas, especially the mouths of large rivers, lagoons and lakes. Nests in trees typically within 1km of the sea.                                                                                                                                                           | Species could forage overhead, but no breeding habitat is present                          |
| <i>Todiramphus chloris</i>    | Collared Kingfisher     | V             |                 | 57                   | This species is recorded in coastal Australia from Shark Bay to the Clarence River where it is almost exclusively associated with mangrove and estuarine areas. Favoured habitat for the Collared Kingfisher is considered to be abundant in the locality in association with the estuarine | Unlikely as suitable estuarine and mangrove habitat is not present                         |



| Scientific Name                    | Common Name               | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                 | Key Habitat Present                                                           |
|------------------------------------|---------------------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|                                    |                           |               |                 |                      | and riparian zones of the Cobaki Broadwater estuarine zone.                                                                                                                                                                                                          |                                                                               |
| <i>Lichenostomus fasciogularis</i> | Mangrove Honeyeater       | V             |                 | 13                   | The primary habitat of the species is mangrove woodlands and shrublands but Mangrove Honeyeaters also range into adjacent forests, woodlands and shrublands, including casuarina and paperbark swamp forests and associations dominated by eucalypts or banksias.    | Unlikely, no mangroves present in the site or adjacent                        |
| <i>Anseranas semipalmata</i>       | Magpie Goose              | V             |                 | 2                    | Species occurs in shallow wetlands with dense growth or rushes or sedges. Nesting occurs in trees over deep water.                                                                                                                                                   | Unlikely, suitable wetland habitat is not present in the site.                |
| <i>Apus pacificus</i>              | Fork-tailed Swift         | P             | ,C,J,K          | 1                    | Migratory species that winters in Australia                                                                                                                                                                                                                          | May fly overhead, but would not use the site for breeding                     |
| <i>Hirundapus caudacutus</i>       | White-throated Needletail | P             | V,C,J,K         | 124                  | Almost exclusively aerial, from heights of less than one metre up to more than 1000 m above the ground. Occur over most types of habitats, particularly above wooded areas including open forest and rainforest, between trees or in clearings and below the canopy. | Species could forage aerially above the site, but would not breed in the area |
| <i>Burhinus grallarius</i>         | Bush Stone-curlew         | E1            |                 | 252                  | Lives in open forest and woodlands with a sparse, grassy ground layer, and fallen timber. It                                                                                                                                                                         | Known to occur in the locality, and could use the site as part of a           |



| Scientific Name               | Common Name          | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                    | Key Habitat Present                                                                               |
|-------------------------------|----------------------|---------------|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
|                               |                      |               |                 |                      | feeds on insects and small insects and vertebrates including frogs, lizards, and snakes. Nesting is undertaken in a scrape or small bare patch.                                                                                                                                                                                                                                                                                                         | broader foraging range. Nesting is not known to occur but could not be ruled out without surveys. |
| <i>Esacus magnirostris</i>    | Beach Stone-curlew   | E             |                 | 5                    | Beaches, islands, reefs and in estuaries, and may often be seen at the edges of or near mangroves. They forage in the intertidal zone of beaches and estuaries, on islands, flats, banks and spits of sand, mud, gravel or rock, and among mangroves. Beach Stone-curlews breed above the littoral zone, at the backs of beaches, or on sandbanks and islands, among low vegetation of grass, scattered shrubs or low trees; also among open mangroves. | Unlikely as suitable habitat is not present.                                                      |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | E             | E               | 2                    | Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes ( <i>Typha</i> spp.) and spikerushes ( <i>Eleocharis</i> spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be                                                                                                                                   | Unlikely, no freshwater wetland habitat present in the site.                                      |



| Scientific Name                        | Common Name                      | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                          | Key Habitat Present                                                                                         |
|----------------------------------------|----------------------------------|---------------|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|                                        |                                  |               |                 |                      | constructed over deeper water from reeds trampled by the bird.                                                                                                                                                                                                                                                |                                                                                                             |
| <i>Ixobrychus flavicollis</i>          | Black Bittern                    | V             |                 | 3                    | Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. During the day, roosts in trees or on the ground amongst dense reeds. | Very marginal habitat present on the northern edge of the site where rainforest borders artificial drains.  |
| <i>Calyptorhynchus lathami lathami</i> | Glossy Black-Cockatoo (southern) | V             |                 | 84                   | Eucalypt forests and woodlands and forage in <i>Casuarina</i> and <i>Allocasuarina</i> . Nest in large tree hollows.                                                                                                                                                                                          | Foraging habitat in the form of <i>Casuarina glauca</i> trees present in site. Breeding habitat not present |
| <i>Charadrius leschenaultii</i>        | Greater Sand-plover              | V             | V,C,J,K         | 2                    | Mangrove, salt marsh and dune vegetation.                                                                                                                                                                                                                                                                     | Unlikely as limited suitable habitat is not present                                                         |
| <i>Charadrius mongolus</i>             | Lesser Sand-plover               | V             | E,C,J,K         | 4                    | Mangrove and salt marsh communities.                                                                                                                                                                                                                                                                          | Unlikely, no suitable habitat present                                                                       |
| <i>Ephippiorhynchus asiaticus</i>      | Black-necked Stork               | E             |                 | 13                   | Associated with tropical and warm temperate terrestrial wetlands, estuarine and littoral habitats, and occasionally woodlands and grasslands and floodplains. Forages in fresh or saline waters up to 0.5m deep,                                                                                              | Unlikely, no suitable habitat present. Adjacent areas to the north are foraging habitat when inundated      |



| Scientific Name              | Common Name             | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                 | Key Habitat Present                                                                                                                           |
|------------------------------|-------------------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                         |               |                 |                      | mainly in open fresh waters, extensive sheets of shallow water over grasslands or sedge land, mangroves, mudflats, shallow swamps with short emergents vegetation and permanent billabongs and pools on floodplains. |                                                                                                                                               |
| <i>Ptilinopus magnificus</i> | Wompoo Fruit-Dove       | V             |                 | 4                    | Occurs in or near rainforest, low elevation moist eucalypt forest and brush box forests. Nesting often occurs in palms over water.                                                                                   | May occur in adjacent areas to the north where palms are present and in overhanging Eucalypt forest. However there are limited local records. |
| <i>Ptilinopus regina</i>     | Rose-crowned Fruit-dove | V             |                 | 8                    | Occurs primarily in sub-tropical and dry rainforest, and occasionally in moist eucalypt forest and swamp forest.                                                                                                     | May occur, but given small area of rainforest not likely to be key breeding habitat                                                           |
| <i>Ptilinopus superbus</i>   | Superb Fruit-dove       | V             |                 | 1                    | Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms                                                                    | May occur, but small area of regrowth rainforest provides limited resources.                                                                  |
| <i>Diomedea exulans</i>      | Wandering Albatross     | E             | E               | 1                    | Wandering albatross spend the majority of their time in flight, soaring over the southern oceans. They breed on a number                                                                                             | Unlikely as few local records and suitable breeding habitat is not present                                                                    |



| Scientific Name                 | Common Name           | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                            | Key Habitat Present                                        |
|---------------------------------|-----------------------|---------------|-----------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
|                                 |                       |               |                 |                      | of islands just north of the Antarctic Circle                                                                                                                                                                                                                   |                                                            |
| <i>Haematopus fuliginosus</i>   | Sooty Oystercatcher   | V             |                 | 52                   | Rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries.                                                                                                                                                                     | Unlikely, no marine habitat present                        |
| <i>Haematopus longirostris</i>  | Pied Oystercatcher    | E             |                 | 179                  | Intertidal flats of inlets and bays, open beaches and sandbanks.                                                                                                                                                                                                | Unlikely, no marine habitat present                        |
| <i>Charadrius leschenaultii</i> | Greater Sand-plover   | V             | V,C,J,K         | 1                    | The Greater Sand-plover breeds in central Asia from Armenia to Mongolia, moving further south for winter. Roosts during high tide on sandy beaches and rocky shores; begin foraging activity on wet ground at low tide, usually away from the edge of the water | Unlikely, no roosting habitat present in the site.         |
| <i>Pluvialis fulva</i>          | Pacific Golden Plover | P             | C,J,K           | 6                    | The Pacific Golden Plover breeds on the Arctic tundra in western Alaska. Found on muddy, rocky and sandy wetlands, shores, paddocks, saltmarsh, coastal golf courses, estuaries and lagoons.                                                                    | Unlikely, suitable habitat is not present within the site. |
| <i>Pluvialis squatarola</i>     | Grey Plover           | V             | V,C,J,K         | 3                    | The Grey Plover breeds around the Arctic regions and migrates to the southern hemisphere, being a regular summer migrant to Australia, mostly to the west and south coasts. It is generally sparse but not uncommon in some areas. It is occasionally           | Unlikely, suitable habitat is not present                  |



| Scientific Name              | Common Name         | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                 | Key Habitat Present                                |
|------------------------------|---------------------|---------------|-----------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                              |                     |               |                 |                      | found inland. The Grey Plover is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts.                                                                                               |                                                    |
| <i>Irediparra gallinacea</i> | Comb-crested Jacana | V             |                 | 5                    | Coastal, prefers sheltered environments; nests in colonies in low dunes.                                                                                                                                                                                                                                                             | Unlikely, no low dune habitat present              |
| <i>Arenaria interpres</i>    | Ruddy Turnstone     | V             | V,C,J,K         | 6                    | Breeds on the northern coasts of Europe, Asia and North America. They are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches                                                                                                                                                                           | Unlikely as site is inland from the coast          |
| <i>Gallinago hardwickii</i>  | Latham's Snipe      | V             | V,C,J,K         | 4                    | Latham's Snipe is a non-breeding migrant to the south east of Australia. Seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges on migration. | Unlikely, no wetlands are present within the site. |



| Scientific Name           | Common Name         | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                                                                                          | Key Habitat Present                                                              |
|---------------------------|---------------------|---------------|-----------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| <i>Tringa brevipes</i>    | Grey-tailed Tattler | P             | C,J,K           | 11                   | Does not breed in Australia. Usually seen in small flocks on sheltered coasts with reefs and rock platforms or with intertidal mudflats. They are also found in intertidal rocky, coral or stony reefs, platforms and islets that are exposed at high tide, also shores of rock, shingle, gravel and shells and on intertidal mudflats in embayments, estuaries and coastal lagoons, especially those fringed with mangroves. | Unlikely, no coastal habitat present within the site.                            |
| <i>Tringa incana</i>      | Wandering Tattler   | P             | J               | 11                   | Breeds in the Northern Hemisphere. Found on rocky islands in the southwest Pacific and on rocky Pacific coasts from California to South America and as far as Australia.                                                                                                                                                                                                                                                      | Unlikely, no rocky islands present within the site. May be seen flying overhead. |
| <i>Tringa nebularia</i>   | Common Greenshank   | E             | E,C,J,K         | 7                    | Breeds in the Northern hemisphere. Common Greenshanks roost both on the coast and inland, in estuaries and mudflats, mangrove swamps and lagoons, and in billabongs, swamps, sewage farms, and flooded crops                                                                                                                                                                                                                  | Unlikely, although adjacent areas could be utilised when inundated               |
| <i>Tringa stagnatilis</i> | Marsh Sandpiper     | P             | C,J,K           | 2                    | Does not breed in Australia. Marsh Sandpipers are commonly                                                                                                                                                                                                                                                                                                                                                                    | Unlikely as few local records, although                                          |



| Scientific Name                 | Common Name             | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                  | Key Habitat Present                                                             |
|---------------------------------|-------------------------|---------------|-----------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                 |                         |               |                 |                      | seen singly, or in small to large flocks in fresh or brackish (slightly salty) wetlands such as rivers, water meadows, sewage farms, drains, lagoons and swamps.                                                                      | adjacent areas could be utilised when inundated                                 |
| <i>Stercorarius parasiticus</i> | Arctic Jaeger           | P             | C,J,K           | 1                    | Breeds in the Northern Hemisphere, wintering in the Canary Current off West Africa, while others travel further into the southern hemisphere, wintering off south-west Africa or south-east South America                             | Unlikely, as few local records                                                  |
| <i>Chlidonias leucopterus</i>   | White-winged Black Tern | P             | C,J,K           | 1                    | Does not breed in Australia. Forages by hawking (i.e. feeding on the wing), dipping (flying 2-4 m above the water then dipping down to take items on or just below the surface of the water), and plunging (shallow dives from 2-4 m) | Unlikely, as few local records and breeding and foraging habitat is not present |
| <i>Gelochelidon nilotica</i>    | Gull-billed Tern        | P             | C               | 16                   | Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean.                  | Unlikely, although adjacent areas could be utilised when inundated              |



| Scientific Name           | Common Name  | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                                 | Key Habitat Present                                                |
|---------------------------|--------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <i>Hydroprogne caspia</i> | Caspian Tern | P             | C,J,K           | 11                   | Usually found near the coast, in extensive wetlands, on coastal and interior beaches and sheltered estuaries. The Caspian Tern lives equally well in fresh water and saline environments.                                                                                                                                                                            | Unlikely as wetlands are not present within the site.              |
| <i>Sterna hirundo</i>     | Common Tern  | P             | C,J,K           | 31                   | Does not breed in Australia. The Common Tern is mainly coastal when not breeding and found in offshore waters, ocean beaches, estuaries and large lakes. Common Terns are occasionally seen in freshwater swamps, floodwaters, sewage farms and brackish and saline lakes.                                                                                           | Unlikely, although adjacent areas could be utilised when inundated |
| <i>Sternula albifrons</i> | Little Tern  | E             | C,J,K           | 30                   | Almost exclusively coastal, preferring sheltered environments; however may occur several kilometres from the sea in harbours, inlets and rivers (with occasional offshore islands or coral cay records). Nests in small, scattered colonies in low dunes or on sandy beaches just above high tide mark near estuary mouths or adjacent to coastal lakes and islands. | Unlikely as no low dune habitat or sandy beaches present           |
| <i>Thalasseus bergii</i>  | Crested Tern | P             | J               | 322                  | Unlikely, few local records and suitable habitat is not present                                                                                                                                                                                                                                                                                                      | Unlikely, few local records and suitable habitat is not present    |



| Scientific Name                  | Common Name         | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                  | Key Habitat Present                                               |
|----------------------------------|---------------------|---------------|-----------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <i>Carterornis leucotis</i>      | White-eared Monarch | V             |                 | 3                    | Coastal, prefers sheltered environments; nests in colonies in low dunes.                                                                                                                                                                                              | Unlikely as few local records and suitable habitat is not present |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella     | V             |                 | 2                    | Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. It builds a cup-shaped nest of plant fibres and cobweb in an upright tree fork high in the living tree canopy. | Unlikely, few local records and suitable habitat is not present   |
| <i>Petroica boodang</i>          | Scarlet Robin       | V             |                 | 2                    | The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs.<br>Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat         | Unlikely, as logs and fallen timber are sparse within the site.   |
| <i>Ardenna grisea</i>            | Sooty Shearwater    | P             | J               | 3                    | The Sooty Shearwater mostly lives over deep ocean waters, but is sometimes found in onshore areas particularly in rough weather. It breeds mostly on subtropical and subantarctic islands around Australasia and also on the New Zealand mainland.                    | Unlikely. Breeding habitat is not present                         |



| Scientific Name             | Common Name             | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                           | Key Habitat Present                                              |
|-----------------------------|-------------------------|---------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <i>Ardenna pacifica</i>     | Wedge-tailed Shearwater | P             | J               | 37                   | Breeds on the islands off Japan, on the Islas Revillagigedo, the Hawaiian Islands, the Seychelles, the Northern Mariana Islands, and off Eastern and Western Australia.                                                                                                                        | May be seen flying overhead but no breeding habit is present     |
| <i>Ardenna tenuirostris</i> | Short-tailed Shearwater | P             | C,J,K           | 62                   | The Short-tailed Shearwater establishes massive breeding colonies off the southern and south-eastern coasts of Australia each year.                                                                                                                                                            | May be seen flying overhead but no breeding habit is present     |
| <i>Fregata ariel</i>        | Lesser Frigate-bird     | P             | C,J,K           | 1                    | Common in tropical seas, breeding on remote islands, including Christmas Island                                                                                                                                                                                                                | Unlikely, few local records and breeding habitat is not present. |
| <i>Sula leucogaster</i>     | Brown Booby             | P             | C,J,K           | 2                    | This species breeds on islands and coasts in the pantropical areas of the Atlantic and Pacific oceans. They frequent the breeding grounds of the islands in the Gulf of Mexico and the Caribbean Sea.                                                                                          | Unlikely, few local records and breeding habitat is not present. |
| <i>Macronectes halli</i>    | Northern Giant-Petrel   | V             | V               | 1                    | The Northern Giant-Petrel has a circumpolar pelagic distribution, usually between 40-64°S in open oceans. Their range extends into subtropical waters in winter and early spring, and they are a common visitor in NSW waters. Breeding in Australian territory is limited to Macquarie Island | Unlikely as limited local records, nesting habitat not present   |



| Scientific Name              | Common Name          | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                             | Key Habitat Present                                                                                                                                                           |
|------------------------------|----------------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Podargus ocellatus</i>    | Marbled Frogmouth    | V             |                 | 1                    | Prefers subtropical rainforest, particularly in deep, wet, sheltered gullies along creeklines and often containing stands of Bangalow Palms or ferns.                                                                                                                            | Unlikely as limited local records. Limited marginal degraded habitat present                                                                                                  |
| <i>Amauornis moluccana</i>   | Pale-vented Bush-hen | V             |                 | 17                   | Found within tall dense understorey or ground-layer vegetation on the margins of freshwater streams and natural or artificial wetlands, usually within or bordering rainforest, rainforest remnants or forests. Builds a shallow nest close to water in thick ground vegetation. | Known to occur in adjacent areas, Rainforest in the site occurs adjacent to an artificial drainage channel. Presence with the site would need to be confirmed through surveys |
| <i>Calidris canutus</i>      | Red Knot             | P             | E,C,J,K         | 2                    | Found on the coast in sandy estuaries with tidal mudflats.                                                                                                                                                                                                                       | Unlikely, no estuarine habitat present                                                                                                                                        |
| <i>Calidris ferruginea</i>   | Curlew Sandpiper     | E             | CE,C,J,K        | 1                    | The species generally occupies littoral and estuarine habitats, and is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.                                                         | Unlikely, no estuarine habitat present                                                                                                                                        |
| <i>Calidris tenuirostris</i> | Great Knot           | V             | CE,C,J,K        | 2                    | Intertidal mudflats or sand flats.                                                                                                                                                                                                                                               | Unlikely, no sand flats or mudflats are present                                                                                                                               |
| <i>Limosa lapponica</i>      | Bar-tailed Godwit    | P             | C,J,K           | 106                  | Breeds in the Northern Hemisphere. Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves.                                                                                                                                                                         | Unlikely. Estuarine mudflats, beaches and mangroves are not present                                                                                                           |



| Scientific Name                  | Common Name         | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                         | Key Habitat Present                                                                                                                     |
|----------------------------------|---------------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <i>Limosa limosa</i>             | Black-tailed Godwit | V             | C,J,K           | 2                    | Sheltered bays, estuaries and lagoons with large intertidal mudflats.                                                                                                                                                                        | Unlikely, no estuarine habitat present                                                                                                  |
| <i>Numenius madagascariensis</i> | Eastern Curlew      | P             | CE,C,J,K        | 76                   | Prefers sheltered coasts, especially estuaries, bays, harbours, inlets and lagoons. Also known to occur in sewage farms, wetlands and mangroves. Species roosts on sandy spits and in low saltmarsh or mangroves.                            | Unlikely, no estuarine habitat present, but could utilise adjacent areas for foraging when inundated                                    |
| <i>Numenius phaeopus</i>         | Whimbrel            | P             | C,J,K           | 110                  | Breeds in the Northern Hemisphere. Whimbrels are found mainly on the coast, on tidal and estuarine mudflats, especially near mangroves. They are sometimes found on beaches and rocky shores.                                                | Unlikely, no estuarine habitat, beaches or rocky shores present                                                                         |
| <i>Xenus cinereus</i>            | Terek Sandpiper     | V             | C,J,K           | 1                    | Coastal mudflats, lagoons, creeks. Favours mud/sandbanks located near mangroves.                                                                                                                                                             | Unlikely, no estuarine habitat present                                                                                                  |
| <i>Ninox strenua</i>             | Powerful Owl        | V             |                 | 1                    | The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. | Unlikely as few local records and suitable breeding habitat is not present. Could forage within the site as part of a larger home range |



| Scientific Name             | Common Name          | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Key Habitat Present                                                                                           |
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| <i>Tyto longimembris</i>    | Eastern Grass Owl    | V             |                 | 16                   | Occurs in areas with tall grass including swamps, grassy plains and flood plains. Species breeds on the ground within dense trodden grass.                                                                                                                                                                                                                                                                                                                                                                                     | May occur, could forage in site as part of a larger home range. Breeding habitat limited to exotic grasslands |
| <i>Tyto novaehollandiae</i> | Masked Owl           | V             |                 | 2                    | Lives in dry eucalypt forests and woodlands, often hunting along the edges of forests, including roadsides. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.                                                                                                                                                                                                                                                                                                     | Unlikely as few local records and suitable breeding habitat is not present                                    |
| <i>Cercartetus nanus</i>    | Eastern Pygmy-possum | V             |                 | 1                    | NSW the Pygmy possum extends from the coast inland to the western slopes where it is found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. The species Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; soft fruits are eaten when flowers are unavailable | Unlikely as few local of records                                                                              |



| Scientific Name                       | Common Name                    | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                       | Key Habitat Present                                                                                                                                                                                                              |
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| <i>Planigale maculata</i>             | Common Planigale               | V             |                 | 5                    | This species is known to inhabit a broad range of habitats incorporating a dense ground cover layer including rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas. A small population of the species has been recently recorded on the northern banks of the Cobaki Broadwater in association with Swamp Mahogany/Brushbox Forest | Assumed present in Tweed Valley Hospital Site. Suitable habitat is a small fragmented area of rainforest regrowth with rocks present in the understorey that would provide only marginal breeding habitat due to the small area. |
| <i>Saccolaimus flaviventris</i>       | Yellow-bellied Sheath-tail-bat | V             |                 | 4                    | This species of bats utilises most habitats across its wide distribution and hunts over the canopy in forested areas and lower within mallee or open country. Roosting may occur within hollow trees and buildings and also within caves and derelict mines                                                                                                | Could roost in derelict building within the site                                                                                                                                                                                 |
| <i>Miniopterus australis</i>          | Little Bent-winged Bat         | V             |                 | 9                    | This species utilises well-timbered habitats including rainforest, Melaleuca swamps and dry sclerophyll forests where it feeds on insects within the canopy and requires caves, mines, stormwater drains and/or tree hollows to roost                                                                                                                      | Known to occur in adjacent areas, but unlikely to roost in the site                                                                                                                                                              |
| <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat          | V             |                 | 5                    | Caves are the primary roosting habitat, but also use derelict                                                                                                                                                                                                                                                                                              | Could roost in derelict building within the site                                                                                                                                                                                 |



| Scientific Name                | Common Name                     | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                           | Key Habitat Present                                                                                        |
|--------------------------------|---------------------------------|---------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
|                                |                                 |               |                 |                      | mines, storm-water tunnels, buildings and other man-made structures. Hunts in forested areas, catching moths and other flying insects above the treetops.                                                                                                                                      |                                                                                                            |
| <i>Micronomus norfolkensis</i> | Eastern Coastal Free-tailed Bat | V             |                 | 1                    | Occurs in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.                                                                                        | Unlikely, could roost in derelict building within the site, but limited local records                      |
| <i>Petaurus norfolcensis</i>   | Squirrel Glider                 | V             |                 | 2                    | Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum Forest west of the Great Dividing Range and Blackbutt-Bloodwood Forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or <i>Acacia</i> midstorey.                              | Unlikely as few local records and suitable habitat is not present                                          |
| <i>Phascolarctos cinereus</i>  | Koala                           | V             | V               | 258                  | Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares. | Unlikely, as no recent records from adjacent areas. No preferred Koala food trees are present in the site. |



| Scientific Name                         | Common Name                 | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                         | Key Habitat Present                                                                                                                       |
|-----------------------------------------|-----------------------------|---------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Petauroides volans</i>               | Southern Greater Glider     |               | V               | 1                    | The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It has a diet mostly comprising eucalypt leaves, and occasionally flowers. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows | Unlikely as few local records and suitable habitat is not present                                                                         |
| <i>Potorous tridactylus tridactylus</i> | Northern Long-nosed Potaroo | V             | V               | 1                    | Inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. A sandy loam soil is also a common feature.                                  | Unlikely. Few local records and suitable habitat is not present in the site.                                                              |
| <i>Pteropus poliocephalus</i>           | Grey-headed Flying-fox      | V             | V               | 55                   | Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosts in large camps and disperses nightly up to 20km to feed in flowering eucalypts.                                                                        | A roosting camp is known to occur at the Kingscliff Library to the west of the site. Use of the site is limited to foraging habitat only. |
| <i>Syconycteris australis</i>           | Common Blossom-bat          | V             |                 | 3                    | Often roost in littoral rainforest and feed on nectar and pollen                                                                                                                                                                                                                                                             | Limited degraded roosting habitat is                                                                                                      |

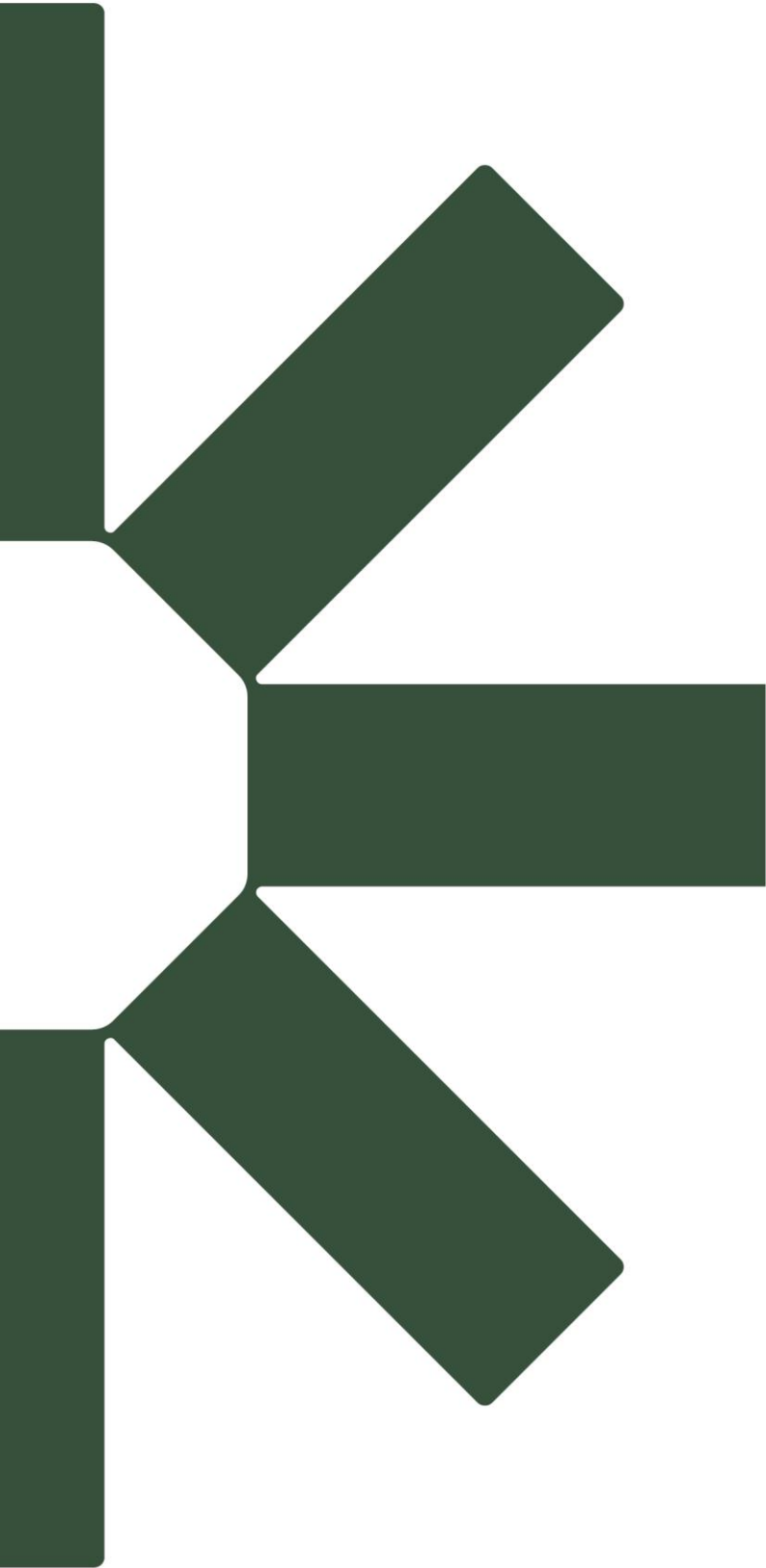


| Scientific Name                  | Common Name            | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                                                                                                         | Key Habitat Present                                                                                              |
|----------------------------------|------------------------|---------------|-----------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|                                  |                        |               |                 |                      | from flowers in adjacent heathland and paperbark swamps.                                                                                                                                                                                                                                                                                                                                     | present on the northern edge of the site. However there are few local records.                                   |
| <i>Chalinolobus nigrogriseus</i> | Hoary Wattled Bat      | V             |                 | 1                    | Found in dry open eucalypt forests, favouring forests dominated by Spotted Gum, boxes and ironbarks, and heathy coastal forests where Red Bloodwood and Scribbly Gum are common. Roosts in hollows and rock crevices.                                                                                                                                                                        | Unlikely, as few local records and limited roosting habitat present.                                             |
| <i>Myotis macropus</i>           | Southern Myotis        | V             |                 | 8                    | Roosts close to water in caves, mines, tree hollows, storm water channels, bridges, buildings or in dense foliage. Forages over streams and pools catching insects and fish.                                                                                                                                                                                                                 | Possible marginal breeding habitat is present in derelict buildings                                              |
| <i>Nyctophilus bifax</i>         | Eastern Long-eared Bat | V             |                 | 2                    | Often occurs in lowland subtropical rainforest and wet and swamp eucalypt forest, also occurs in moist eucalypt forest. Roosts in a variety of microhabitats including tree hollows, the hanging foliage of palms, in dense clumps of foliage of rainforest trees, under bark and in shallow depressions on trunks and branches, among epiphytes, in the roots of strangler figs, among dead | Possible marginal breeding habitat present in the form of degraded rainforest regrowth and in derelict buildings |



| Scientific Name             | Common Name                 | BC Act status | EPBC Act status | BioNet Atlas Records | Habitat Requirements                                                                                                                                                                                                                                                                                 | Key Habitat Present                                                                           |
|-----------------------------|-----------------------------|---------------|-----------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                             |                             |               |                 |                      | fronds of tree ferns and less often in buildings.                                                                                                                                                                                                                                                    |                                                                                               |
| <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat     | V             |                 | 1                    | Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings.                                                | Possible marginal breeding habitat is present in derelict buildings                           |
| <i>Ozimops lumsdenae</i>    | Northern Free-tailed Bat    | V             |                 | 2                    | Occurs in a range of vegetation types in northern Australia, from rainforests to open forests and woodlands, and are often recorded along watercourses. Roost mainly in tree hollows but relatively large colonies have been found under house roofs in urban areas in Queensland.                   | Possible marginal breeding habitat is present in derelict buildings                           |
| <i>Thersites mitchellae</i> | Mitchell's Rainforest Snail | E             | CE              | 90                   | This species was formally widely distributed on coastal alluvia between the Richmond and Tweed Rivers. Within its range the species is restricted to lowland subtropical rainforest and swamp sclerophyll forest with a rainforest understory, typically on alluvial soils with a basaltic influence | Known to be present in adjacent areas but habitat within the site is fragmented and marginal. |





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