Biodiversity Summary

Lismore South Public School – Flood Recovery Rebuild

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Prepared for: NSW Department of Education

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1. Introduction

This Biodiversity Summary has been prepared to support a Review of Environmental Factors (REF) for the rebuild of Lismore South Public School (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The activity will be carried out at Lismore South Public School (LSPS) located 69-79 Kyogle Street, South Lismore (the site).

The purpose of this report is to summarise the biodiversity values present at the site and the potential impact of the proposed activity on those biodiversity values.

2. Background

The biodiversity summary provided herein is based on the following assessments which have been prepared for the site in relation to the proposed activity:

- Ecological Assessment Report by Kleinfelder (2023) – refer to Appendix A of **Appendix A**.
- BDAR Waiver Application by GeoLINK May 2024 – refer to **Appendix A**.
- BDAR Waiver Request – SSD – 69750458 Response to Request for Additional Information.
- Arboricultural Impact Assessment by GHD (2024).

The Secretary (or delegate) of the Department of Planning and Environment (DPE) can waive the requirement for a BDAR when proponents of State Significant Development (SSD) and State Significant Infrastructure (SSI) can clearly demonstrate that the proposed development is not likely to have a significant impact on biodiversity values. It is acknowledged that the proposed activity is no longer regarded as SSD, however it was determined on 30 July 2024, by Department of Climate Change, Energy, the Environment and Water (DCCEEW) that a BDAR was not required for the proposed development. The proposed development was described as "demolition of existing buildings and structures and retention of Building K and COLA and construction of a new school facilities including new a school building, hall, library, administration, new pre-school, landscaping and associated works, as set out in the *BDAR Waiver Application Lismore South Public School Corner Phyllis and Wilson Streets, South Lismore Geolink 2024*." This information is provided as it demonstrates that DCCEEW acknowledged that the proposal would not have a significant impact on biodiversity values in granting the BDAR waiver (refer to **Appendix B**).

3. Site Description

The site, located at 69-79 Kyogle Street, South Lismore, consists of two separate land parcels situated on either side of Wilson Street. The proposed activity will be undertaken on the eastern parcel, where most of the school's existing structures are located. The western parcel contains sports fields and temporary learning facilities. **Figure 3.1** outlines the school's boundary, covering approximately 2.5 hectares. Due to flood damage, the existing buildings on the eastern parcel are currently unused, and students are temporarily using facilities on the sports field and oval, located on the western side of Wilson Street, adjacent to the primary school.

Figure 3.1 Aerial image of site (Source: Nearmap)

4. Proposed Activity Description

The proposed activity comprises the rebuild of the LSPS on the eastern parcel of the existing site, in South Lismore, and will be delivered in a single stage. The western parcel is out of the scope of the activity. Any works required on the western parcel (such as removal of demountable classrooms) will be subject to separate approval (if required).

A detailed description of the proposal is as follows:

1. Retention of the existing play equipment, Building K and covered outdoor learning area (COLA) on the western parcel.
2. Bulk earthworks, comprising fill and excavation and other site preparation works on the eastern parcel.
3. Construction of a new building on the eastern parcel for LSPS including:
    a. A one storey building (with undercroft areas below) fronting Kyogle Street containing a general learning space (GLS) hub, hall, library, support hub, administration, and pre-school.
    b. Undercroft outdoor learning areas as well as amenities and storage located on ground level.
4. Landscaping and public domain works, including tree planting, a games court in the northeast corner and an outdoor playing area adjacent to the preschool.
5. A car park on the eastern side of the site, with access from Kyogle Street.
6. Waste collection area access from Kyogle Street.
7. Multiple entrance points, including:
    a. Primary and secondary entries distributed on site frontages.

b. Vehicular access point to provide access to waste collection/delivery areas and car parking.

8. Ancillary public domain mitigation measures.

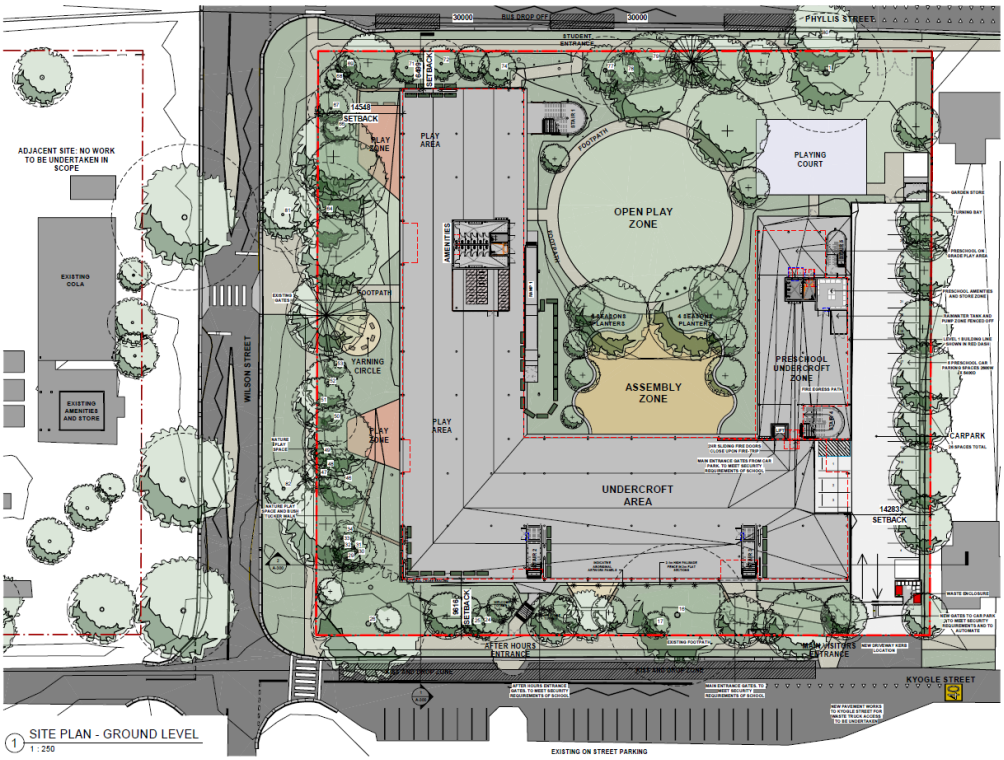

Figure 4.1 Proposed site plan (Source: EJE Architecture)

5. Site Assessment Results

- The site is not mapped as Biodiversity Value (BV) land on the DCCEEW Biodiversity Values Map and Threshold Tool.
- The site does not occur within a Coastal Use Area and is not near mapped areas of Coastal Wetlands or Littoral Rainforests.
- No parts of the site nor areas in proximity to the site are depicted on Council's Koala habitat mapping.
- The site is not mapped as part of any Wildlife Corridor or Key Habitat as per Scotts (2003).
- The site primarily comprises cleared land with groups of linear trees consisting of native and exotic species and gardens that have been planted around the boundary of the site, as well as next to and in between buildings. Managed lawns are characterised by Couch (*Cynodon dactylon*), Carpet Grass (*Axonopus compressus**) and Kikuyu Grass (*Pennisetum clandestinum**). Vegetation within the site is not indicative of any native Plant Community Type (PCT).
- Vegetation occurring on the site is not representative of any Threatened Ecological Community (TEC).
- No threatened flora species were detected at the site by Kleinfelder (2023) and based on historical clearing at the site, no threatened flora species are likely to occur.
- The lack of useable vegetation corridors and the distance to the closest habitat mean that it is unlikely that Koalas would utilise the site for foraging.
- No waterways and associated aquatic habitat occur on the site.
- No karsts, caves, crevices, cliffs and other geological features of significance occur at the site.
- No rocks occur at the site.
- Removal of vegetation as a result of the proposal may result in minor impacts to the potential marginal foraging habitat of highly mobile local threatened fauna species such as the Grey-

headed Flying-fox (*Pteropus poliocephalus*), birds and microchiropteran bats however is not expected to result in a significant impact.

- Human-made structures (school buildings) occur at the site and would be modified by the proposal. These structures are unlikely to provide habitat for threatened fauna species.
- Non-native vegetation on the site is not considered to provide permanent/ regularly used habitat for threatened species.
- Increased impacts to threatened fauna as a result of increased noise/ light are considered likely to be negligible given the sites location within an urban area and historical use as a school site.
- All trees proposed for removal are within an urban area with no native understorey and do not align with a PCT.
- Trees present are located within a modified landscape and are surrounded by managed land, similar to trees in a car park, street trees or landscaping.

6. Mitigation Measures

Mitigation measures outlined in **Table 6.1** are recommended to minimise potential biodiversity impacts resulting from the activity.

Table 6.1 Proposed Biodiversity Related Mitigation Measures

Mitigation Number	Aspect/ Section	Mitigation Measure	Reason for Mitigation Measure
1	Flora	■ Tree protection zones are to be established around trees to be retained prior to works commencing on site and maintained for the extent of establishment works on the site.	To minimise potential impacts to retained trees.
2	Flora	■ The limit of vegetation clearing are to be clearly delineated on site prior to works commencing.	To minimise potential impacts to retained trees.
3	Fauna	■ Pre-clearing surveys are to be undertaken if any hollow-bearing trees are to be removed each morning by an ecologist or spotter-catcher.	To ensure nesting or roosting fauna are not present within vegetation to be removed.
4	Fauna	■ Should Koalas be found on site during the clearing of native vegetation and/or earthworks, works must: – be temporarily suspended within a range of 50 m from any tree which is occupied by a Koala; – be avoided in any area between the Koala and the nearest areas of habitat to allow the animal to move to adjacent undisturbed areas; – must not resume until the koala has moved from the tree of its own volition.	To minimise potential impacts to Koalas (if present).
5	Fauna	■ Any injured fauna are to be taken to WIRES or Northern Rivers Wildlife Carers (NRWC). The contact details of WIRES (1300 094 737) and NRWC (6628 1866) are to be made known to the site supervisor and ecologist.	To provide injured fauna with adequate care if injured.

Mitigation Number	Aspect/ Section	Mitigation Measure	Reason for Mitigation Measure
6	General	■ All work is to be undertaken in accordance with the *Saving Our Species Hygiene guidelines* (DPIE, 2020). This includes: – All plant, vehicles and personal items (footwear and clothing) are to be cleaned before entering the site. – If plant, vehicles and personal items are taken off site during the works, these items are to be cleaned before returning to the site. – All plant, vehicles and personal items (footwear and clothing) are to be cleaned offsite before being used again in other areas.	To minimise potential impacts to amphibians.
7	General	■ Erosion and sediment control measures are to be implemented (in accordance with the *Landcom/ Department of Housing Managing Urban Stormwater; Soils and Construction Guidelines*) and maintained to prevent sediment moving off-site and sediment laden water entering any water course.	To minimise potential impacts to waterways.
8	General	■ Measures are to be implemented during construction works so that machinery and plant do not introduce weed seed or propagules to the site (e.g. by adoption and implementation of the 'Arrive Clean, Leave Clean' guidelines (DoE 2015).	To minimise spread of weeds.
9	General	■ Biosecurity risk weeds are to be managed according to requirements under the *Biosecurity Act 2015* and/ or Council management measures.	To minimise spread of weeds.
10	General	■ Contractors are to ensure all machinery is cleaned prior to entering the works areas to ensure that soil, vegetation and Yellow Crazy Ant is not imported to the site. Any observations of Yellow Crazy Ant are to be reported to the Biosecurity Hotline, the DPI website, or via the Local Lands Services office.	To minimise the potential movement of Yellow Crazy Ants.

7. Evaluation of Environmental Impacts

It is considered that the proposed activity would not have a significant impact on biodiversity values as:

- The site has been previously used for Lismore South Public School.
- The site comprises managed land in the form of planted vegetation (including native and exotic species) within garden beds and areas of lawn.
- Vegetation is not indicative of any native PCT or TEC.
- The site does not provide any suitable permanent habitat (including artificial habitat) for any listed threatened entity (flora or fauna).
- No hydrological features would be impacted as a result of the proposal.
- No movement corridors or flight paths would be significantly impacted or severed due to the proposal and impacts to flight integrity are considered negligible.

Overall, the proposed activity including tree removal is not expected to have a significant impact on the environment.

The activity described will not affect areas of outstanding biodiversity value or Wilderness Areas. The Activity is unlikely to significantly affect threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* and therefore a Species Impact Statement (or Biodiversity Development Assessment Report (BDAR) if the Proponent elected) is not required. The activity is also unlikely to affect Commonwealth land or have a significant impact on any matters of national environmental significance in relation to the EPBC Act.

Yours sincerely
GeoLINK

Veronica Silver
Senior Ecologist/ Planner/ Bushfire Consultant

Certification

	Name	Signature	Date
Prepared by	Veronica Silver		02/12/2024
Reviewed by	Troy Jennings		02/12/2024

UPR	Description	Issued By	Date Issued
4664-1073	Version 1	VJS	02/12/2024
4664-1077	Version 2	VJS	12/12/2024
4664-1083	Version 3	VJS	13/02/2025
4664-1092	Version 4	VJS	04/06/2025

References

Scotts, D. (2003). *Key Habitats and Corridors for Forest Fauna. Occasional Paper 32.* NSW NPWS.

GHD (2024). *Arboricultural Impact Assessment Lismore South Public School – Flood Recovery Rebuild.* Report prepared for Department of Education.

Appendix A

Lismore South Public School BDAR Waiver (GeoLINK, May 2024)

BDAR Waiver Application

Lismore South Public School Corner of Phyllis and Wilson Streets, South Lismore

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Prepared for: SINSW

Certification

	Name	Signature	Date
Prepared by	David Havilah		23/04/2024
Reviewed by	Veronica Silver		23/04/2024

UPR	Description	Issued By	Date Issued
4664-1047	Version 1	Veronica Silver	23/04/2024
4664-1048	Version 2	Veronica Silver	02/05/2024

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1. Introduction

1.1 Background

In response to the 2022 Northern Rivers flood disaster in NSW, School Infrastructure (SINSW) are proposing to redevelop Lismore South Public School on its existing site at the corner of Phyllis and Wilson Street, South Lismore. The site encompasses the following lots:

Eastern Side of Wilson Street:

- Lot 21, Section 1, DP448737
- Lot 22, Section 1, DP448737
- Lot 23, Section 1, DP448737
- Lot 1, DP64010
- Lot 26, Section 1, DP448737
- Lot 1, DP158407
- Lot 2, DP158407

Western Side of Wilson Street:

- Lot 20, Section 2, DP448737
- Lot 21, Section 2, DP448737
- Lot 22, Section 2, DP448737
- Lot 23, Section 2, DP448737
- Lot 24, Section 2, DP448737
- Lot 25, Section 2, DP448737
- Lot 26, Section 2, DP448737

As the proposal would be a State Significant Development Application (SSDA), preparation of a Biodiversity Development Assessment Report (BDAR) is required in accordance with the Biodiversity Assessment Method (BAM) and is mandatory unless the proposal receives a waiver from the Secretary (or delegate) of the NSW Department of Planning, Housing and Infrastructure (DPHI). As impacts to biodiversity on the site would be minimal, a BDAR waiver application for the proposal is appropriate. This report provides the required information for DPHI to assess the merits of the BDAR waiver application for the proposal. Project details are summarised in **Table 1.1**.

An Ecological Assessment Report was prepared by Kleinfelder (2023) and has been used to inform this BDAR waiver. The report is included in **Appendix A**.

Table 1.1 Project Details

Administrative Details	
Proponent name	School Infrastructure NSW
Contact details	Tessa Sharp (tessa.sharp2@det.nsw.edu.au) Project Director (Infrastructure Delivery) SINSW
Project ID	**Name**: Lismore South Public-School Redevelopment **Project status**: Request for SEARs submitted

1.2 The Site

Site details of the proposed development are summarised in **Table 1.2**. The site locality is shown in **Figure 1.1**.

Table 1.2 Site Details

Required information	Description
Street address, Lot and DP, local government area (LGA)	The site is located at the corner of Phyllis and Wilson Streets, Lismore, NSW and is legally described as Lot 1 Parcels 21-23 and 26 DP448737, Lot 1 DP64010, Lots 1 and 2 158407, and Lot 2 Parcels 20-26 DP448737. It occurs within the Lismore Local Government Area (LGA).
Description of existing site and surrounding area	The existing Lismore South Public School site proposed for redevelopment comprises two sites separated by Wilson Street. They include existing school infrastructure and school grounds which were severely damaged by the 2022 flood disaster. Surrounding land is zoned R2 (Low Density Residential), IN1 (General Industrial), IN2 (Light Industrial) and RE1 (Public Recreation).
Zoning	R2 –Low Density residential
Development type	Major Project – State Significant Development (SSD)

Plate 1.1 Typical view of the site

1.3 Proposed Development

The proposal would involve redevelopment of the Lismore South Public School which was severely damaged in the 2022 Northern Rivers flood disaster. Future development of the site would occur on land occurring on the eastern side of Wilson Road only as shown in the concept layout in **Figure 1.2**. The proposal would include:

- Classrooms
- Offices
- Sheds
- Parking areas
- Sports fields
- Open space areas.

1.4 Personnel

Contributors to the preparation of the BDAR waiver, their qualifications and roles are listed in **Table 1.3**. All assessors involved with the project have extensive experience in assessing native vegetation, threatened species habitat and implementing the BAM.

Table 1.3 Personnel

Name	Qualifications	Position and role
David Havilah	▪ Bachelor of Science ▪ Accredited BAM Assessor (BAAS 18129)	Senior Ecologist – report preparation
Veronica Silver	▪ Bachelor of Environmental Science ▪ Graduate Diploma Urban and Regional Planning ▪ Accredited BAM Assessor (BAAS 19063)	Senior Ecologist – technical review

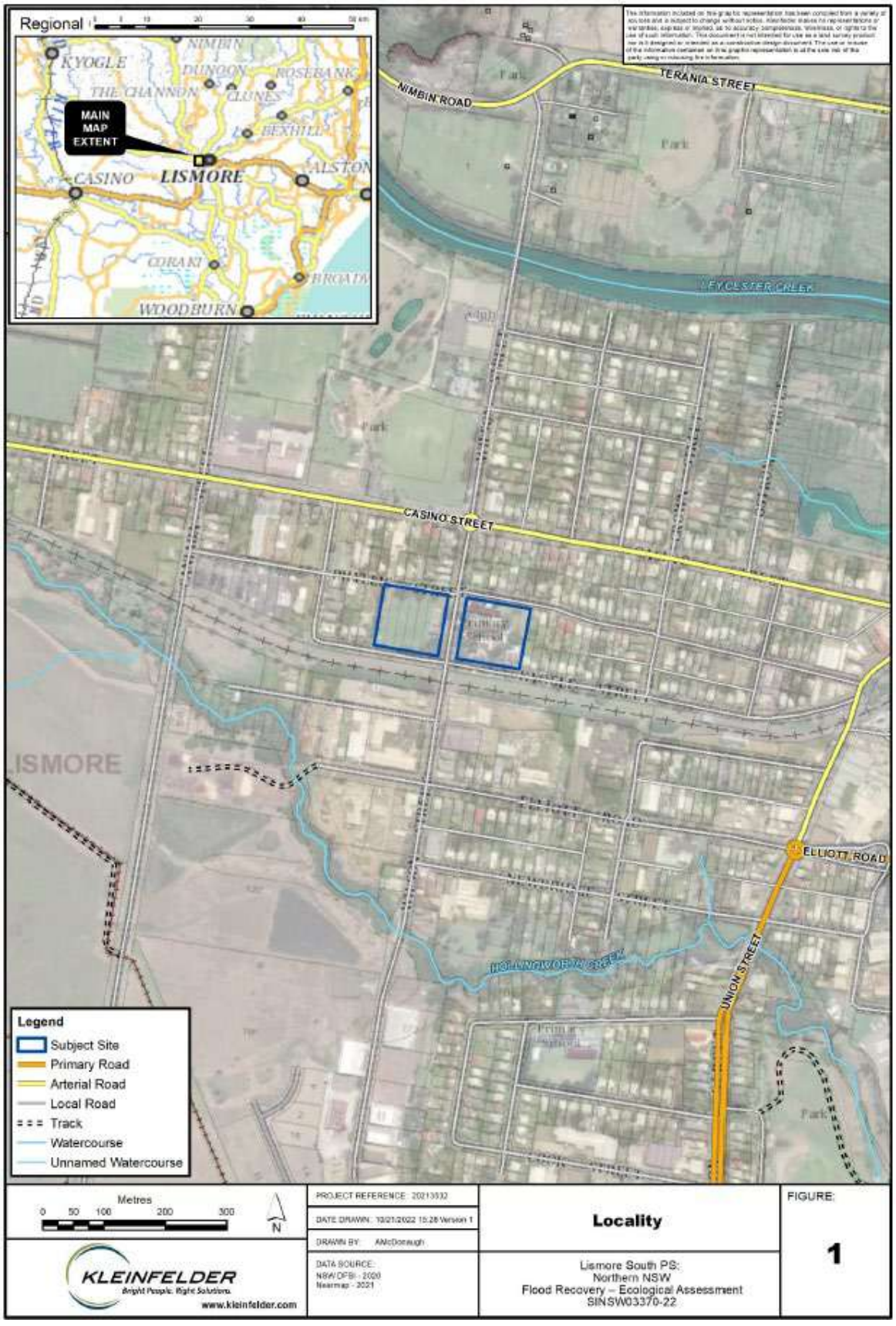

Figure 1.1 Site Locality

Figure 1.2 Concept layout showing development area limited to eastern side of Wilson Street

2. Methodology

As mentioned, this BDAR waiver utilises findings of an Ecological Assessment Report prepared for the site by Kleinfelder (2023) which is included in full in **Appendix A**.

2.1 Desktop Review

Kleinfelder (2023) completed the following desktop review for the site:

- A search of the BioNet Wildlife Atlas (10 km x 10 km grid centred on the site).
- A search of the Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES) within a 5 km radius of the site.
- Review of the NSW Department of Planning and Environment (DPE) now NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) ePlanning Spatial Viewer.
- Review of the DCCEEW Biodiversity Values Map and Threshold Tool.
- Review of vegetation mapping for the site available on Trees Near Me NSW (DCCEEW).

2.2 Vegetation Field Assessment

A vegetation and habitat assessment within the site was conducted by Kleinfelder on 12 August 2022 and included:

- One Biodiversity Assessment Method (BAM) plot completed within the site.
- Recording plant species within the site.
- Mapping vegetation within the site.

2.3 Fauna Assessment

Fauna habitat values were recorded by Kleinfelder (2023) using a hand-held GPS during the site-based assessment. Attributes considered important to fauna included hollow-bearing trees, nests, solid or hollow logs, burrows, abundance of nectar and fruit resources, water bodies, vegetation cover and structural complexity, and leaf litter. Suitability of habitat for threatened fauna species occurring in the locality was also assessed during the survey.

3. Desktop Review

3.1 Database Searches

Kleinfelder's search of the NSW BioNet Atlas dated 21 September 2022 for records of threatened communities, flora and fauna species within 5 km of the site returned a list of 14 communities, 27 threatened flora species, 15 birds, eight mammals, one reptile and one insect (refer to **Appendix A**).

3.2 Biodiversity Values Mapping

The site is not mapped as Biodiversity Value (BV) land on the DCCEEW Biodiversity Values Map and Threshold Tool (refer to **Figure 3.1**).

Figure 3.1 Biodiversity Value Map with LSPS highlighted blue indicating no BV present on site

3.3 SEPP (Resilience and Hazard) Mapping

The site does not occur within a Coastal Use Area and is not near mapped areas of Coastal Wetlands or Littoral Rainforests.

3.4 Lismore Council Koala Habitat Mapping (2013)

No parts of the site nor areas in proximity to the site are depicted on Council's Koala habitat mapping.

3.5 Wildlife Corridors

The site is not mapped as part of any Wildlife Corridor or Key Habitat as per Scotts (2003).

4. Site Assessment

4.1 Vegetation Communities

Kleinfelder (2023) found that the site is primarily cleared land, with the exception of groups of linear trees and gardens that have been planted around the boundary of the site, next to and in between buildings. Vegetation communities within the site as determined by Kleinfelder (2023) are shown in **Figure 4.1** and included:

- Managed Lawns – characterised by Couch (*Cynodon dactylon*), Carpet Grass (*Axonopus compressus*) and Kikuyu Grass (*Pennisetum clandestinum*).
- Planted Vegetation – occurring in linear strips and gardens consisting of native and exotic species. Vegetation is not indicative of any native Plant Community Type (PCT).

4.2 Threatened Ecological Communities

Vegetation occurring on the site is not representative of any Threatened Ecological Community (TEC).

4.3 Threatened Flora

No threatened flora species were detected at the site by Kleinfelder (2023) and it was concluded that based on historical clearing at the site, no such species are likely to occur.

4.4 Fauna Habitats

Litter within garden beds was reported by Kleinfelder (2023) as a potential fauna habitat feature with no other important fauna habitat features (i.e. fresh waterbodies, logs, coarse litter, burrow or nests etc) identified within the site. One hollow-bearing tree was reported from within the 'agricultural' section of the site which was considered unlikely to require clearing as part of the proposal.

4.5 Threatened Fauna

Kleinfelder (2023) considered the site to provide potential marginal foraging habitat for only highly mobile local threatened fauna species such as the Grey-headed Flying-fox (*Pteropus poliocephalus*), birds and microchiropteran bats. Removal of planted vegetation as a result of the proposal may result in minor impacts to the foraging habitat of these species. Based on the concept design and the disturbed nature of the site, it is unlikely that any significant impacts to threatened fauna would occur as a result of the proposal.

Kleinfelder (2023) notes that some Koala food trees occur on the site including Forest Red Gum (*Eucalyptus tereticornis*) and Small-fruited Grey Gum (*Eucalyptus propinqua*). It is considered that the lack of useable vegetation corridors and the distance to the closest habitat would make it unlikely that Koalas would utilise the site for foraging.

4.6 Aquatic Habitat

No waterways and associated aquatic habitat occur on the site.

Figure 4.1 Vegetation Zones

5. Impacts to Biodiversity Values

An assessment of impacts to biodiversity values is provided below in **Table 5.1**.

Table 5.1 Assessment of Impacts to Biodiversity Values

Biodiversity Value	Assessment of Impacts
Vegetation abundance 1.4 (b) BC Regulation	Vegetation communities at the site include managed lawns and planted vegetation occurring in linear strips and garden beds comprising native and exotic species. Vegetation is not indicative of any native Plant Community Type (PCT). Removal of some planted trees would be required within the site on the eastern side of Wilson Road. This vegetation is considered to be of low conservation value given its planted nature and within the context of an existing school site.
Vegetation integrity 1.5 (2)(a) BC Act	No threatened flora species occur on the site. Vegetation on the site is not indicative of any Threatened Ecological Community (TEC). In relation to prescribed impacts: ■ No karsts, caves, crevices, cliffs and other geological features of significance occur at the site. ■ No rocks occur at the site. ■ Human-made structures (school buildings) occur at the site and would be modified by the proposal. These do not provide substantial habitat for fauna species. ■ Non-native vegetation on the site is not considered to provide permanent/ regularly used habitat for threatened species. ■ Increased impacts to threatened fauna as a result of increased noise/ light are considered likely to be negligible given the sites location within an urban area and historical use as a school site.
Threatened species abundance 1.4(a) BC Regulation	As the site is highly disturbed, impacts to threatened species abundance are considered likely to be negligible. In relation to indirect impacts: ■ The proposal would not lead to an increase in traffic and associated risk of vehicle strikes to fauna given that the site has been historically used as a school. ■ No non-natural water bodies occur at the site. ■ Offsite indirect impacts to threatened fauna are considered unlikely with implementation of standard construction mitigation measures.
Habitat connectivity 1.4(c) BC Regulation	Given the lack of native vegetation on the site, it does not currently contribute to local habitat connectivity or movement corridors.
Threatened species movement 1.4(d) BC Regulation	
Flight path integrity 1.4 (e) BC Regulation	The proposal does not occur within any mapped wildlife corridors. Given the lack of impacts to vegetation resulting from the proposal, no impacts to flight path integrity for any threatened fauna species are considered likely to occur.
Water sustainability 1.4(f) BC Regulation	No water bodies or hydrological processes would be directly impacted by the proposal. Indirect impacts to waterways are unlikely with the use of standard construction/ operational mitigation measures.

6. Conclusion

The Secretary (or delegate) of the Department of Planning and Environment has the power to waive the requirement for a BDAR when proponents of State Significant Development (SSD) and State Significant Infrastructure (SSI) can clearly demonstrate that the proposed development is not likely to have a significant impact on biodiversity values.

Given the information provided in this report, it is considered that the proposed development would not have a significant impact on biodiversity values as:

- The site has been previously cleared and used for Lismore South Public School.
- It comprises planted vegetation (including native and exotic species) some of which would need to be removed on the eastern side of Wilson Road to facilitate redevelopment of the school.
- Vegetation is not indicative of any native Plant Community Type (PCT) or Threatened Ecological Community (TEC).
- The site does not provide any suitable permanent habitat (including artificial habitat) for any listed threatened entity (flora or fauna) that may occur within the locality.
- No hydrological features would be impacted as a result of the proposal.
- No movement corridors or flight paths would be significantly impacted or severed due to the proposal and impacts to flight integrity are considered negligible.

References

Department of Climate Change, Energy, the Environment and Water (2023). *Protected Matters Search Tool.*

Kleinfelder (2023). *Lismore South Public School – Flood Recovery Works: Ecological Assessment Report.* Report prepared for SINSW.

NSW Department of Planning and Environment (2023). *NSW BioNet Database Search Tool*.

Scotts, D. (2003). *Key Habitats and Corridors for Forest Fauna. Occasional Paper 32.* NSW NPWS.

Copyright and Usage

Appendix A

Lismore South Public School – Flood Recovery Works: Ecological Assessment Report

Lismore South Public School - Flood Recovery Works

Ecological Assessment Report

20231835

27 January 2023

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Phone: +61 2 4949 5200
www.kleinfelder.com.au

27 January 2023
20231835

School Infrastructure New South Wales

Attention: Beau Travers

Subject: Lismore South Public School - Flood Recovery Works
Ecological Assessment Report

1 INTRODUCTION

1.1 SCOPE

Kleinfelder Australia Pty Ltd (Kleinfelder) were engaged by School Infrastructure New South Wales (SINSW), to provide Preliminary Ecological Assessment (PEA) to support the proposed Flood Recovery Works (FRW) of Lismore South Public School (LSPS), located on the corner of Phyllis and Wilson Streets, Lismore (**Figure 1**). A list of abbreviations is in **Appendix 1 Table 3**.

The LSPS is located in the centre section of the Lismore City Local Government Area (Lismore LGA). As such, the proposed development is subject to the *Lismore Local Environment Plan 2014*.

The following terms are used throughout this report to describe particular geographical areas:

- Subject Site – Lot 1 Parcels 21-23 and 26 DP448737, Lot 1 DP64010, Lots 1 and 2 158407, and Lot 2 Parcels 20-26 DP448737 corner of Phyllis and Wilson Streets (eastern and western sections divided by Wilson Street), Lismore, New South Wales (NSW) 2480.
- Development Site – Area within the Subject Site proposed to be directly impacted by the proposed development (not yet determined).
- Locality – Land within a 5-kilometre (km) radius of the Subject Site.

1.2 OBJECTIVES

The approach to the PEA involved a desktop assessment in conjunction with a site-based assessment. Preparation of this PEA is the first stage of a staged approach to ecological assessment. The PEA aims to identify key ecological constraints within the Subject Site; however, a more detailed ecological assessment in accordance with statutory requirements could be required to support a future Development Application (DA).

Potential direct and indirect impacts associated with the proposed development would be further avoided and/or minimised through the implementation of mitigation and management measures outlined in **Section 4** of the report.

The specific objectives of the assessment are as follows:

- Describe the flora and fauna habitat present on, or likely to occur on the Subject Site.
- Assess the relevance and value of the Subject Site for threatened species and ecological communities (and habitat) listed under the NSW Biodiversity Conservation Act 2016 (BC Act).
- Assess the potential impacts of the proposed development on threatened species and ecological communities, pursuant to Section 7.3 of the BC Act.
- Comment on the likely occurrence and relevance of Matters of National Environmental Significance (MNES) listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).
- Provide preliminary advice regarding any key development constraints identified during the assessment.

1.3 Local Context

The Subject Site is located at corner of Phyllis and Wilson Streets, Lismore, NSW 2480, and is legally described as Lot 1 Parcels 21-23 and 26 DP448737, Lot 1 DP64010, Lots 1 and 2 158407, and Lot 2 Parcels 20-26 DP448737. The Subject Site is located within the Lismore LGA and zoned as R2 – Low Density Residential. The Subject Site has three street frontages:

- Phyllis Street to the North of the Subject Site.
- Kyogle to the south of the Subject Site.
- Wilson Street divides the Subject Site north to south.

The Subject Site is surrounded by land zoned R2, IN1 (General Industrial), IN2 (Light Industrial) and RE1 (Public Recreation). The Wilson River runs in a southerly direction to the north and east of LSPS and is within 540 m to the north and 800 m to the east of the existing infrastructure. Hollingsworth Creek, a tributary of the Wilson River, is within 300 m of the southern boundary of the Subject Site. The eastern section of the Subject Site has an area of 1.06 ha and the western section is 1.03 ha. The school infrastructure, covering the majority of the eastern section, sits on the highest point of the Subject Site, ranging from 10.75 m to 11.75 m Australian Height Datum (AHD). The western section has a high point of 10.75 m in the centre and slopes down to 1.25 m AHD on the southern boundary and to 10.5 m AHD on the northern boundary. The subject site is almost level.

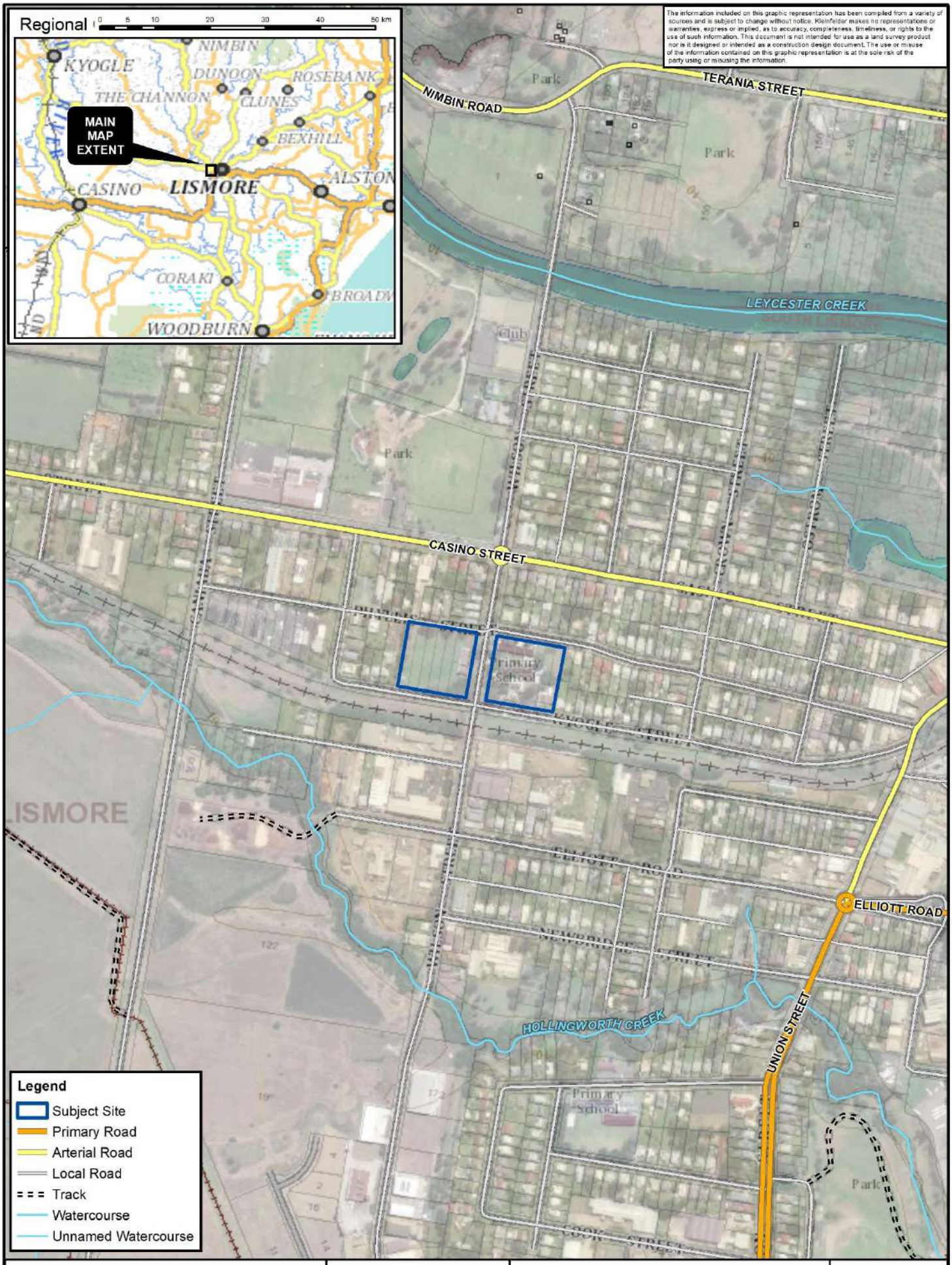
The Subject Site is primarily cleared land, with the exception of the existing groups of linear trees and gardens that have been planted around the boundary of the Subject Site, next to and in between the buildings (**Plate 1** and **Figure 2**).

1.4 Proposed Development

The existing school may be re-developed to protect the infrastructure from anticipated flood heights. Acor Consultants (AcoR) investigation has shown the existing Lismore City Council minimum habitable floor level (MHFL) of 13.0 m is inadequate due to the February 2022 flood reaching 14.55 m AHD, which did not inundate the first floor of Block A (Library), a two-storey building, but did inundate the first floor of other 2 storey buildings. The MHFL recommended to be considered by AcoR was 14.6 m AHD. The FRW for the Development Site has not been determined and the FRW may not occur due to the height of the February 2022 flood.

For the purpose of this assessment, we have assumed potential impacts throughout the Subject Site if it was to be redeveloped. The potential impact area will include direct impacts of construction of new infrastructure, and indirect impacts such as the movement of machinery, stockpiling and landscaping.

The following Sections provide the results of a site assessment conducted within the Subject Site, and consideration of legislative requirements relevant to the proposed development.



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DATE DRAWN: 10/21/2022 15:28 Version 1

DRAWN BY: AMcDonaugh

DATA SOURCE:
NSW DFSI - 2020
Nearmap - 2021

Locality

Lismore South PS:
Northern NSW
Flood Recovery – Ecological Assessment
SINSW03370-22

FIGURE:

1

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2 BIODIVERSITY VALUES

2.1 METHODS

2.1.1 Desktop

2.1.1.1 Aerial Imagery

Historical aerial imagery was reviewed to assess the extent of vegetation clearing that has previously occurred within the Subject Site. Aerial imagery from 1966 was retrieved from NSW Globe (2022).

2.1.1.2 Database Searches

A list of threatened ecological communities, species and populations that have been reported or modelled to occur within a set distance of the Subject Site was obtained from the following databases:

- NSW Office of Environment and Heritage (OEH) Atlas of NSW Wildlife and Communities: (Environment & Heritage | NSW BioNet) (5 km).
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool: (Protected Matters Search Tool - DCCEEW) (5 km).

2.1.1.3 NSW Mapping Portals

The State Vegetation Type Map NSW Extant PCT mapping through the SEED portal (Geocortex Viewer for HTML5 (nsw.gov.au)) was used to determine the vegetation mapping for the Subject Site.

State Environmental Planning Policy (Resilience and Hazards) 2021 – Map (http://webmap.environment.nsw.gov.au/PlanningHtml5Viewer/?viewer=SEPP_CoastalManagement) was used to determine if any Coastal Wetlands or Littoral Rainforest are mapped within the Subject Site.

The Biodiversity Values Map and Threshold Tool (Biodiversity Values Map and Threshold tool (nsw.gov.au)) was used to generate a Biodiversity Values Map and Threshold Report to determine if any areas of the Subject Site are mapped as having high biodiversity value.

The occurrence of regulated waterways within the Subject Site was reviewed by obtaining Hydroline Mapping from NSW Land and Property Information.

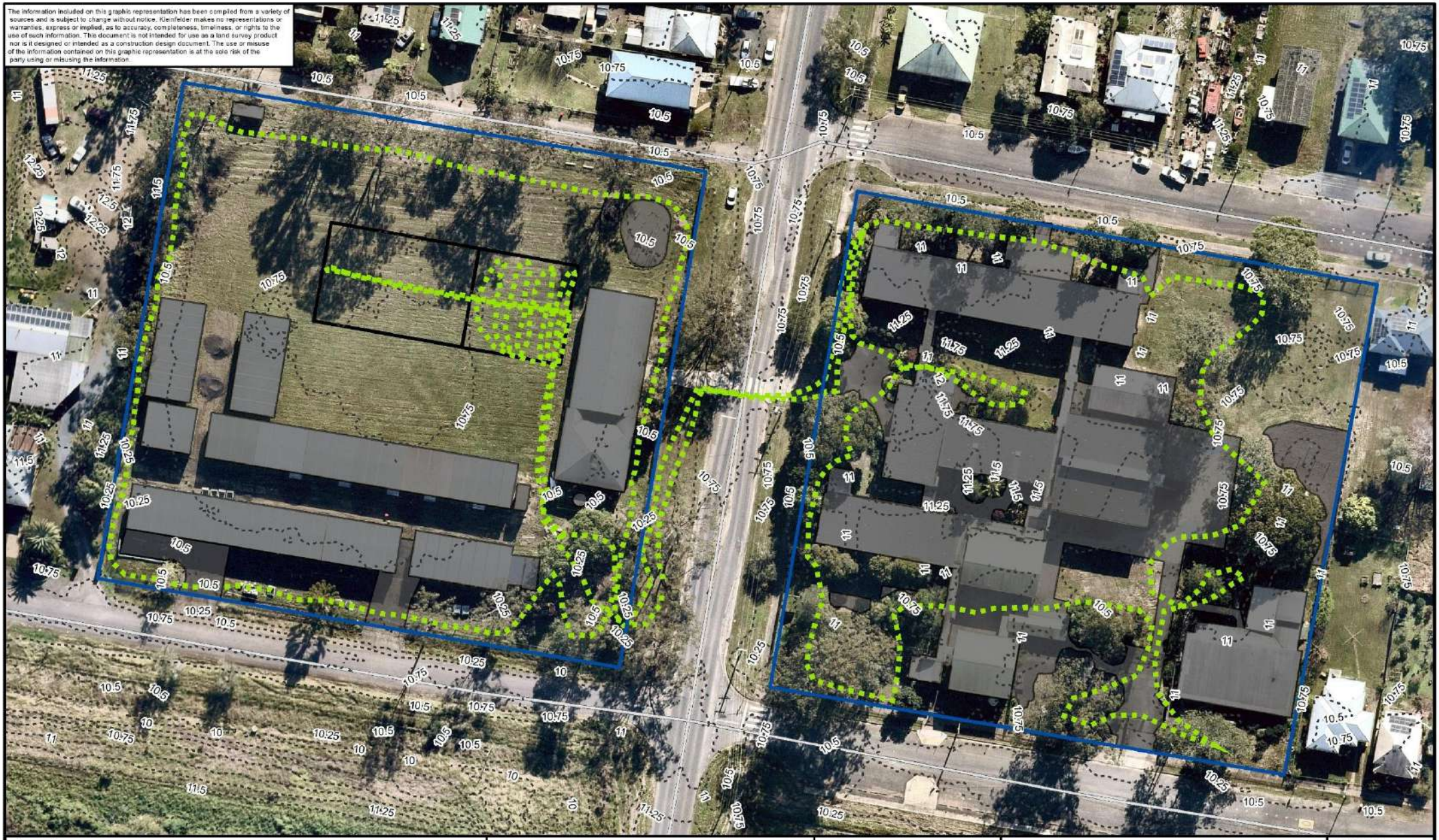
2.1.2 Vegetation Field Assessment

A vegetation and habitat assessment were conducted within the Subject Site on the 12 August 2022. One BAM Plot (Biodiversity Assessment Method) was completed within the Subject Site (LSPS1 in **Figure 2**). A list of plant species within other areas of the Subject Site was also recorded.

Vegetation and habitats were compared with descriptions provided in the BioNet Vegetation Classification to identify Plant Community Types (PCTs). Plant identification and nomenclature was based on species descriptions presented within The Flora of New South Wales Volumes 1 to 4 (Harden, G (ed.) 1993) and with reference to taxonomic updates in PlantNET - The Plant Information Network System of Botanic Gardens Trust, Sydney, Australia (National Herbarium of NSW 2022).

2.1.3 Fauna Habitat Assessment

Fauna habitat values were recorded using a hand-held GPS during the site-based assessment. Attributes considered important to fauna include hollow-bearing trees, nests, solid or hollow logs, burrows, abundance of nectar and fruit resources, water bodies, vegetation cover and structural complexity, and leaf litter. Suitability of habitat for threatened fauna species occurring in the locality was also assessed during the survey.



Legend

- Subject Site
- Buildings/Structures
- LSPS1
- Survey Tracks
- Contours
- Local Road

Metres

0 5 10 20 30 40 50

N

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DATA SOURCE:
NSW DFSI - 2020
Nearmap - 2021

Survey Effort

Lismore South PS:
Northern NSW
Flood Recovery – Ecological Assessment
SINSW03370-22

FIGURE:

2

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2.1.4 Fauna Surveys

A diurnal fauna survey was completed within the Subject Site on 12 August 2022. Due to the absence of remnant native vegetation and proposed impacts within the Subject Site, a reduced survey effort was deemed suitable for the assessment. The fauna survey recorded all species observed within, or adjacent to, the Subject Site. It was determined to not be necessary to conduct fauna surveys as per *Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft)* (DEC 2004), and Commonwealth of Australia Fauna Survey Guidelines (Commonwealth of Australia 2010).

2.1.5 GIS Mapping

GIS mapping by Kleinfelder used ArcMap 10.8.2 with aerial imagery from Imagery © 2022 Nearmap, HERE.

2.2 RESULTS

2.2.1 Desktop

2.2.1.1 Aerial Imagery

Historical aerial imagery for the Subject Site is presented in **Plate 1**. This imagery indicates that the existing woody vegetation at the Subject Site in 1966 was located in linear strips along all the boundaries of the eastern section of the Subject Site and there were no trees in the western section. The above linear strips were inside of the LSPS boundary fence during the survey. The remainder of the Subject Site had been cleared prior to 1966. The Nearmap aerial imagery from June 2022 (downloaded August 2022) shows that other vegetation was planted throughout the subject after 1966 (**Figure 2**).

Plate 1: Aerial photograph of Lismore south Public School (NSW Globe 1966)

2.2.1.2 Database Searches

A search of the NSW Bionet Atlas for records of threatened communities, flora and fauna species within 5 km of the Subject Site returned a list of 14 communities, 27 threatened flora species, 15 birds, eight mammals, one reptile and one insect (**Appendix 2 Table 4** and **Table 5**). There were not any Biodiversity Values mapped within the Subject Site, however, a patch of Plant Community Type (PCT) 3993 (*Far North Swamp Oak-Paperbark Tidal Forest*) was mapped in the southeastern corner of the Subject Site western section. The above community and threatened species are discussed in **Sections 2.2.2** and **2.2.3**.

A search of the DCCEEW Protected Matter Search Tool returned a list of five threatened ecological communities, 36 threatened plants, 15 threatened birds, nine mammals, one reptile, two frogs, two fish, and two insects. Another 14 migratory species that could occur within a 5 km radius of the Subject Site (**Appendix 3**). These species are further discussed in **Sections 2.2.2** and **2.2.3**.

2.2.1.3 Coastal Management Area

The Subject Site does not occur within a Coastal Use Area and is not near any of the Coastal Wetlands or Littoral Rainforests. The Coastal Management SEPP (2018) is not relevant to LSPS FRW.

2.2.1.4 Waterways

There were no regulated waterways associated with the Subject Site, but the closest regulated waterways, Hollingsworth Creek and Wilson River are 300 m and 540 m consecutively from the infrastructure of LSPS. Future development of the Subject Site should not require approval from the Department of Primary Industries Water (DPI Water) as it is unlikely the proposed FRW would directly or indirectly impact the riparian zone of the regulated waterways.

2.2.2 Vegetation Assessment

2.2.2.1 Flora

A total of 84 flora species were recorded within the Subject Site, including 50 exotic species, two of which were considered 'High Threat Exotics" or listed Priority Weeds for the North Coast Local Land Services Region under the *Biosecurity Act 2015* (NSW) (NCLLS 2021). No threatened flora species were identified within the Subject Site during field survey. A list of the flora species identified within the Subject Site is provided in **Appendix 4 Table 6**. There was a large number of exotic garden plants that were not included.

2.2.2.2 Vegetation Communities

There was one patch of PCT 3993 – *Far North Swamp Oak-Paperbark Tidal Forest* that was listed in the southeastern corner of the western section the Subject Site (**Plate 2**). PCT 3993 is listed as a member community of Endangered Ecological Communities (EECs) – *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*. PCT 3993 is described as:

- Tall to very tall, sparse to mid-dense forest of *Casuarina glauca* and *Melaleuca quinquenervia*, occurring on coastal lowland alluvial and estuarine deposits north from Broadwater, north coast.
- The canopy almost always includes the trees *Casuarina glauca* and *Melaleuca quinquenervia*, with the vine *Parsonsia straminea*, the former two dominating with the highest foliage cover. Commonly, there is a low cover of the small trees *Cupaniopsis anacardioides* and *Excoecaria agallocha*. The ground layer very frequently includes the forb *Enydra woollsii* and distinctive fern *Acrostichum speciosum*, both sometimes abundant, and commonly the large forb *Crinum pedunculatum* and tall grass *Phragmites australis*.
- This PCT occurs mainly in very warm, wet locations receiving 1550-1760 mm mean annual rainfall, at very low elevations of up to 10 metres asl, commonly in estuarine areas subject to tidal inundation.

PCT 3993 is a member of Threatened Ecological Community (TEC) Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community listed as Endangered under the EPBC Act.

The patch was line of planted trees along the fence and two other trees containing *Corymbia citriodora* (Lemon-scented Gum), *E. robusta* (Swamp Mahogany) and *Melaleuca vimilas* (Weeping Bottlebrush) (**Plate 4**). These trees were planted after 1966 (**Plate 2**) and were linear with the fence lines. The patch was not PCT 3993 or any other PCT.

The vegetation communities within the Subject Site (**Figure 3**) were characterised by Managed Lawns, and Planted Vegetation (**Plate 3 - Plate 12**). Managed Lawns were characterised by Green Couch (*Cynondon dactylon*), Carpet Grass (*Axonopus compressus*) and Kikuyu Grass (*Pennisetum clandestinum*) (**Appendix 4 Table 6**). The Managed lawns included the BAM site LSPS1.

The Planted Vegetation (**Appendix 4 Table 6**) was in linear strips and gardens, and consisted of native and exotic species in four vegetation layers. None of the vegetation communities identified with any Plant Community Types (PCTs). There were no Threatened Ecological Communities (TECs) identified within the Subject Site.

Plate 2: PCTs mapped in the Subject Site

2.2.3 Threatened Flora and Fauna habitat

As a result of historical clearing, the school development and vegetation planting (gardens and linear tree lines), the Subject Site is not considered to represent suitable habitat for locally occurring threatened flora species. The vegetation within the Subject Site is characterised as large areas of Managed Lawns and Planted Vegetation (**Figure 3** and **Plate 3**).

There was fine litter in the gardens of the Subject Site (**Figure 2**), but no other important fauna habitat features (i.e. fresh waterbodies, hollow-bearing trees, logs, coarse litter, burrows or nests etc.) were identified within the Subject Site. The Hollow-bearing Tree was in the Agricultural Section of the Subject Site and unlikely to be cleared for the FRW.

The Subject Site is considered potential marginal foraging habitat for only highly mobile local threatened fauna species listed under the NSW BC Act and Commonwealth EPBC Act, such as the Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable [BC and EPBC Act]), Microchiropteran bats and birds. Minor impacts to the habitat of these species could occur if some of the native trees were cleared for the FRW. Potential Koala (*Phascolarctos cinereus*) food trees (*Eucalyptus spp*) were in the Subject Site.

Legend

- Subject Site
- Buildings/Structures
- Managed Lawns
- Planted Vegetation
- Local Road

Metres

0 5 10 20 30 40 50

N

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DATE DRAWN: 10/21/2022 Version 1

DRAWN BY: AMcDonaugh

DATA SOURCE:
NSW DFSI - 2020
Nearmap - 2021

Vegetation Zones

Lismore South PS:
Northern NSW
Flood Recovery – Ecological Assessment
SINSW03370-22

FIGURE:

3

J:\00 CLIENT FILES\123801_NSW_Government\20231835_SINSW03370-22 Nth NSW Flood Ecology Services\Mapping\20231835_Lismore_Fig03_Field_Vegetation.mxd

Plate 3: **Planted Native/Exotic trees and Gardens within the Subject Site**

Plate 4: **Planted Native/Exotic trees and Gardens within the Subject Site**

Plate 5: **Planted Native/Exotic trees and Gardens within the Subject Site**

Plate 6: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 7: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 8: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 9: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 10: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 11: **Planted Native/Exotic trees and gardens within the Subject Site**

Plate 12: **Planted Native/Exotic trees and gardens within the Subject Site**

2.2.4 Fauna Assessment.

There were 10 bird species recorded within the Subject Site (**Appendix 4** Table 7). None were threatened species. No others fauna species were recorded in the Subject Site.

3 LEGISLATIVE REQUIREMENTS

3.1 STATE LEGISLATION

3.1.1 Biodiversity Conservation Act 2016 (NSW)

The NSW *Biodiversity Conservation Act 2016* (BC Act), the NSW *Biodiversity Conservation Regulation 2017* (BC Regulation) and amendments to the *NSW Local Land Services Act 2013* (LLS Act) commenced on 25 August 2017. The legislation aims to "maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development". Both the BC Act and LLS Act apply to the clearing of land within the Subject Site (non-rural land in the Lismore LGA).

There are no PCTs or TECs within the Subject Site. However, there is marginal habitat that may support some highly mobile threatened species. Clearing of the Planted Vegetation could impact on these species, but it is unlikely.

3.1.2 Biosecurity Act 2015

Under the *Biosecurity Act 2015* (NSW) all plants are regulated with a general biosecurity duty "to prevent, eliminate or minimise any biosecurity risk they may pose". Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable." Under the Act, a biosecurity impact "is an adverse effect on the economy, environment, or the community that arises, or has the potential to arise, from a biosecurity matter." Species which require control prior to and post construction of the Project to ensure they are not spread due to FRW, include the high threat species listed in **Table 1**.

Table 1: Weed species requiring control within the Subject Site

Family	Scientific Name	Common Name	Weeds of National Significance (WONS)	Priority weeds of the North Coast LLS (Biosecurity Act)	High Threat Weeds (BAM)
Asteraceae	*Senecio madagascariensis*	Fireweed	✓	✓	✓
Asparagaceae	*Asparagus aethiopicus*	Sprenger's Asparagus	✓	✓	✓

3.1.3 Water Management Act 2000

There are no regulated waterways within the Subject Site that would be directly impacted, but the Wilson River 200 m south from the Subject Sited could be indirectly impacted, although unlikely. Mitigation measures to reduce the potential of indirect impacts to the Creeks riparian corridors are detailed in **Section 4.**

3.1.4 State Environmental Planning Policy (Biodiversity and Conservation) 2021 Ch. 4 State Koala Habitat Protection

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 (SEPP Biodiversity and Conservation) does apply to land zoned R2 in the Lismore LGA and therefore relevant to the Subject Site. There are some Koala feed trees within the Subject Site along the fence lines including *Eucalyptus tereticornis* (Blue

Gum) and *E. propinqua* (Grey Gum). Koalas have been recorded within 5 km of the Subject Site (**Table 5**). The areas surrounding the Subject Site are rural or residential, and there are vegetation corridors on the Wilson River and Hollingsworth Creek but these do not contain Koala habitat. There are eucalypt forests in the locality, but the closest are 2 km from the Subject Site. The lack of useable vegetation corridors and the distance to the closest habitat would make it unlikely that Koalas would use the Subject Site for foraging. It is unlikely any Koala habitat would be impacted by the FRW.

3.1.5 Comprehensive Koala Plan of Management for South-east Lismore 2013

Under the Comprehensive Koala Plan of Management for South-east Lismore 2013 (Lismore KPoM), the Subject Site is not in the Koala Planning Area (KPA). The Lismore KPoM is not relevant to the Subject Site.

3.1.6 Lismore Local Environmental Plan 2012

The Subject Site is located within the Lismore LGA. The Lismore Local Environmental Plan 2014 (Lismore LEP) controls development within the Subject Site through zoning and development controls. The objective for the environment associated land zoned R2 (Infrastructure) are:

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To limit the density of residential development to ensure that development is compatible with the flood hazard associated with the land.
- To ensure that tourist and visitor accommodation is of a scale and intensity that is appropriate and compatible with the character of the area.

These controls are described in greater detail by the supporting Lismore Development Control Plan 2012 (Lismore DCP).

3.1.7 Lismore Development Control Plan 2012

The Lismore DCP Chapter 14 (Vegetation Protection) supports the Lismore LEP by providing additional detail and guidance on addressing vegetation management issues associated with development. The Lismore DCP should be read in conjunction with the Lismore LEP for its application and exemptions are listed in Schedule 1. Section 3 of the Lismore DCP lists vegetation exempt from requiring an approval from the Lismore City Council. Most of the vegetation does not meet the exemption requirements and will require an approval as required in Section 4 of the Lismore DCP.

Vegetation management activities in the above zone should be undertaken in accordance with the provisions of the *Local Land Services Act 2013* and the *Biodiversity Conservation Act 2016* and Chapter 14, Section4 of the Lismore DCP.

3.2 Commonwealth Legislation

3.2.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Under the EPBC Act, an approval is required for actions that are likely to have a significant impact on Matters of National Environmental Significance (MNES). An action includes a project, development, undertaking, activity or series of activities. When a person proposes to take an action, which they believe may need approval under the EPBC Act, they must refer the proposal to the Australian Government Minister for the Environment. The EPBC Act identifies the following nine MNES:

1. World Heritage properties.
2. National heritage places.
3. Wetlands of international importance (Ramsar Convention).
4. Listed threatened species and communities.
5. Migratory species listed under international agreements.
6. Great Barrier Reef Marine Park.
7. Commonwealth marine areas.
8. Nuclear actions; and

9. Water resources in respect to CSG and large coal mines.

MNESs 4 and 5 have been considered as relevant to this assessment. However, due to the lack of any PCTs or TECs within the Subject Site, which only contains marginal habitat for highly mobile species, the likelihood of significant impacts on MNES is low. However, an EPBC Act test of significance should be performed as a part of any further work under a Development Application. This document is not a test of significance.

4 MITIGATION MEASURES

The measures outlined in are proposed to minimise and avoid potential impacts associated with the proposed development.

Table 2: Summary of mitigation and management measures for the proposed development

Impact	Action and Outcome	Responsibility	Timing
Direct impact / prescribed impact			
Clearing of Planted Vegetation and habitat	▪ Avoid and minimise clearing impacts to native vegetation where possible, especially Koala food tree species. ▪ Trim trees where appropriate to prevent clearing of those trees. ▪ Clearly delineate the boundaries of the project footprint to prevent any unnecessary clearing beyond its extent. ▪ Ensure vehicle and equipment parking areas and stockpile areas are identified and positioned to avoid areas containing ecological value. Stockpiling must not occur within, or in close proximity (5m) to, areas of native vegetation retained under the proposed development. ▪ Appropriate signage such as 'no go zone' or 'environmental protection area' should be installed surrounding the area of Planted Vegetation to be retained. ▪ Clearly identify and communicate the location of any 'no go zones' in site inductions. ▪ Tree protection measures will be implemented to protect retained trees the Subject Site. Tree protection measures should consider allowances for Tree Protection Zones in accordance with AS4970 (Standards Australia, 2009).	Construction site manager	Prior to and during vegetation clearing
Removal of vegetation resulting in fauna injury and mortality	▪ Appropriate exclusion fencing around any retained trees and Planted Vegetation to be retained adjacent to the Development Site should be erected, considering allowance for Tree Protection Zones in accordance with AS4970 (Standards Australia, 2009).	Construction site manager and suitably qualified/trained fauna handler	Prior to and during tree clearing
Impacts to surface and groundwater quality and quantity due to sediment run-off and/or contaminant runoff into adjacent watercourses	▪ Source controls such as sediment fences, mulching and jute matting will be utilised where appropriate. ▪ Site-based vehicles and plant equipment will carry spill kits. ▪ Erosion and sediment control will be required for the development in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) prior to commencement of construction. ▪ Limit the use of pesticides in the project footprint where possible to avoid contamination of nearby watercourses/wetland areas.	Construction site manager	During vegetation clearing, construction and operation
Vehicle collision with fauna	▪ Speed limits within the Development Site should be limited to 15 km/hr during construction. ▪ The Development Site should be separated from vegetated areas throughout the construction and operational phases of	Construction site manager	During construction and operation

Impact	Action and Outcome	Responsibility	Timing
	the development. This separation should be achieved through physical barriers including fencing and appropriate signage.		
Indirect Impact			
Transfer of weeds and pathogens to and from site	▪ The fungal pathogens *Phytophthora cinnamomi* and Myrtle Rust (*Puccinia psidii*) are likely to occur in the Lismore LGA, however, it is unknown if they occur within the Development Site. These pathogens can have devastating impacts on native plant communities and inhabiting fauna if not properly managed. ▪ All plant and equipment brought on to site should be assessed (or declared) as clean of biological contamination. ▪ Ensure soil seed material is not transferred.	Construction site manager	During vegetation clearing, construction, and operation
Noise, vibration, lighting, waste and air pollution impacts to adjacent sensitive habitat areas	▪ Increased human activity (from workers and traffic levels) directly adjacent to sensitive habitat areas may cause disturbance to flora and fauna species in adjoining habitat. ▪ Impacts from construction and operational activities, such as disturbance to an animal's normal behaviour patterns due to noise, vibration, lighting or dust may cause areas of previously suitable habitat to become sub-optimal and may cause fauna species to vacate areas previously suitable. ▪ Measures to mitigate impacts on flora and fauna from noise, vibration, waste, light and air pollution such as: ▪ Enforce 'carry-in, carry-out' policy regarding rubbish and waste materials generated on-site during construction to avoid waste materials entering adjacent vegetation. ▪ Restriction of public access and associated impacts from domestic pets, waste dumping and damage to adjoining vegetation must be enforced pre, during and post construction. ▪ Levels of lighting within the site will be reduced to a minimal level to reduce any adverse effects upon the essential behavioural patterns of light-sensitive fauna. ▪ Lighting should comply with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting. ▪ Noise minimisation practices in accordance with DPE recommendations. ▪ Dust control measures such as covering loads where required; amending operations under excessive wind conditions including ceasing operations if required; use of water tankers as required, to control dust; rehabilitation through vegetation of surfaces to be left unsealed; and truck wheel washes or other dust removal measures.	Construction site manager	During construction and operation

5 CONCLUSION AND RECOMMENDATIONS

The proposed re-development includes the FRW of LSPS to minimise the negative effects of flooding. A detailed vegetation and habitat assessment was conducted within the Subject Site on the 10 August 2022 by a Senior Ecologist. The vegetation within the Subject Site was characterised by Managed Lawns (native and exotic) and Planted Vegetation (native and exotic). No threatened species or their habitats were recorded within the Subject Site.

The development footprint of the FRW has not been determined, but outcomes for the proposed development were:

- There are no PCTs or TECs that could be impacted by the LSPS FRW.

- The Subject Site is considered potential marginal foraging habitat for only highly mobile local threatened fauna species listed under the NSW BC Act and Commonwealth's EPBC Act, such as the Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable [BC and EPBC Act]), Microchiropteran Bats and birds. Impacts to these species are not considered likely due to the marginal habitat in the Subject Site.
- There are Koala feed trees in the Subject Site. The LSPS is zoned as R2 in the Lismore LGA to which the SEPP Biodiversity and Conservation applies. However, it is not considered Koala Habitat in the Lismore Comprehensive Koala Plan of Management. It is unlikely any Koala habitat would be cleared.
- Although ecological constraints in the Subject Site are minimal (marginal habitat), there would not be any impacts if the Planted Vegetation was not cleared.

Potential direct and indirect impacts associated with the proposed development would be further avoided and/or minimised through the implementation of mitigation and management measures outlined in **Section 4** of this report.

6 REFERENCES

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APPENDIX 1: ABBREVIATIONS

Table 3: Abbreviations and Meaning

Abbreviation	Meaning
AHD	Australian Height Datum
APZ	Asset Protection Zones
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conservation Act
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DPI	Department of Primary Industries
EPBC Act	Environment Protection and Biodiversity Conservation Act
FRW	Flood Recovery Works
KMA	Koala Management Area
KMP	Koala Management Precinct
LLS Act	Local and Land Services Act
LSPS	Lismore south Public School
MHFL	Minimum Habitable Floor Level
MNES	Matters of National Environmental Significance
NCLLS	North Coast Local and Land Services
OEH	Office of Environment and Heritage
PCTs	Plant Community Types
PEA	Preliminary Ecological Assessment;
SEARs	Secretaries Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
TEC	Threatened Ecological Communities

APPENDIX 2: COMMUNITIES AND WILDLIFE (BIONET) IN THE LOCALITY

Table 4: Threatened Communities within the Locality

Scientific Name	Common Name	NSW status	Comm. status	Records
Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	E3		P
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		k
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		E	K
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		P
Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion	Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion	E3		K
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K
Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3		K
Lowland Rainforest of Subtropical Australia	Lowland Rainforest of Subtropical Australia		CE	K
Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3		K
Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3		K
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3		P
White Gum Moist Forest in the NSW North Coast Bioregion	White Gum Moist Forest in the NSW North Coast Bioregion	E3		K

Note 1: Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria: Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Communities in selected area [North: -28.76 West: 153.21 East: 153.31 South: -28.86] returned 0 records for 14 entities. Report generated on 21/09/2022 12:32 PM.

Note 2: CE = Critically Endangered: E = Endangered: K = Known.

Table 5: Threatened Flora and Fauna within the Locality

#	Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records
1.	Reptilia	Elapidae	*Cacophis harriettae*	White-crowned Snake	V,P		2
1.	Aves	Anatidae	*Stictonetta naevosa*	Freckled Duck	V,P		3
2.	Aves	Columbidae	*Ptilinopus magnificus*	Wompoo Fruit-Dove	V,P		8
3.	Aves	Columbidae	*Ptilinopus regina*	Rose-crowned Fruit-Dove	V,P		13
4.	Aves	Podargidae	*Podargus ocellatus*	Marbled Frogmouth	V,P		10
5.	Aves	Apodidae	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	1
6.	Aves	Ciconiidae	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		19
7.	Aves	Ardeidae	*Ixobrychus flavicollis*	Black Bittern	V,P		1
8.	Aves	Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		4
9.	Aves	Accipitridae	*Hieraaetus morphnoides*	Little Eagle	V,P		1
10.	Aves	Jacanidae	*Irediparra gallinacea*	Comb-crested Jacana	V,P		5
11.	Aves	Cacatuidae	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		1
12.	Aves	Psittacidae	*Glossopsitta pusilla*	Little Lorikeet	V,P		1
13.	Aves	Tytonidae	*^^Tyto longimembris*	Eastern Grass Owl	V,P,3		1
14.	Aves	Tytonidae	*^^Tyto tenebricosa*	Sooty Owl	V,P,3		1
15.	Aves	Monarchidae	*Carterornis leucotis*	White-eared Monarch	V,P		2
1.	Mammalia	Phascolarctidae	*Phascolarctos cinereus*	Koala	E1,P	E	1547
2.	Mammalia	Petauridae	*Petaurus norfolcensis*	Squirrel Glider	V,P		3
3.	Mammalia	Pteropodidae	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	844
4.	Mammalia	Molossidae	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		1
5.	Mammalia	Vespertilionidae	*Nyctophilus bifax*	Eastern Long-eared Bat	V,P		13
6.	Mammalia	Vespertilionidae	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		2
7.	Mammalia	Miniopteridae	*Miniopterus australis*	Little Bent-winged Bat	V,P		22
8.	Mammalia	Miniopteridae	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		6
1.	Insecta	Carabidae	*^^Nurus brevis*	Shorter Rainforest Ground-beetle	E1,3		285

#	Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records
1.	Flora	Apocynaceae	*Ochrosia moorei*	Southern Ochrosia	E1	E	11
2.	Flora	Doryanthaceae	*Doryanthes palmeri*	Giant Spear Lily	V,P		1
3.	Flora	Fabaceae (Caesalpinioideae)	*Senna acclinis*	Rainforest Cassia	E1		1
4.	Flora	Fabaceae (Faboideae)	*Desmodium acanthocladum*	Thorny Pea	V	V	336
5.	Flora	Fabaceae (Faboideae)	*Rhynchosia acuminatissima*	Pointed Trefoil	V		3
6.	Flora	Lauraceae	*Endiandra hayesii*	Rusty Rose Walnut	V	V	1
7.	Flora	Meliaceae	*Owenia cepiodora*	Onion Cedar	V	V	1
8.	Flora	Menispermaceae	*Tinospora smilacina*	Tinospora Vine	E1		7
9.	Flora	Menispermaceae	*Tinospora tinosporoides*	Arrow-head Vine	V		120
10.	Flora	Myrtaceae	*Gossia fragrantissima*	Sweet Myrtle	E1	E	44
11.	Flora	Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	E4A	CE	4
12.	Flora	Myrtaceae	*Rhodomyrtus psidioides*	Native Guava	E4A	CE	1
13.	Flora	Myrtaceae	*Syzygium hodgkinsoniae*	Red Lilly Pilly	V	V	2
14.	Flora	Orchidaceae	*^Oberonia complanata*	Yellow-flowered King of the Fairies	E1,P,2		3
15.	Flora	Orchidaceae	*^Sarcochilus dilatatus*	Brown Butterfly Orchid	E1,P,2		2
16.	Flora	Poaceae	*Arthraxon hispidus*	Hairy Jointgrass	V	V	546
17.	Flora	Primulaceae	*Myrsine richmondensis*	Ripple-leaf Muttonwood	E1	E	2
18.	Flora	Proteaceae	*Floydia praealta*	Ball Nut	V	V	7
19.	Flora	Proteaceae	*Hicksbeachia pinnatifolia*	Red Boppel Nut	V	V	2
20.	Flora	Proteaceae	*Macadamia integrifolia*	Macadamia Nut		V	1
21.	Flora	Proteaceae	*Macadamia tetraphylla*	Rough-shelled Bush Nut	V	V	4
22.	Flora	Ranunculaceae	*Clematis fawcettii*	Northern Clematis	V	V	13
23.	Flora	Rubiaceae	*Randia moorei*	Spiny Gardenia	E1	E	4
24.	Flora	Rubiaceae	*Triflorensia cameronii*	Cameron's Tarenna	E1		5
25.	Flora	Rutaceae	*Coatesia paniculata*	Axe-Breaker	E1		13
26.	Flora	Santalaceae	*Thesium australe*	Austral Toadflax	V	V	2
27.	Flora	Tiliaceae	*Corchorus cunninghamii*	Native Jute	E1	E	6

Note 1: Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the

Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Entities in selected area [North: -28.76 West: 153.21 East: 153.31 South: -28.86] returned a total of 3,938 records of 52 species. Report generated on 21/09/2022 12:25 PM.

Note 2: CE = Critically Endangered: E = Endangered: E1 = Endangered; E2 = Endangered Population; E4 = Extinct (not seen for > 50 years); E4A = Critically Endangered; C = CAMBA: J = JAMBA: K = ROKAMBA (C,JK = migratory species); V = Vulnerable; P = Protected; 2 in NSW Status = Category 2 sensitive species; 3 in NSW Status = Category 3 sensitive species.

APPENDIX 3: THREATENED COMMUNITIES AND WILDLIFE (PROTECTED MATTERS REPORT) WITHIN THE LOCALITY

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 16-Aug-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	67
Listed Migratory Species:	17

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	31
Commonwealth Heritage Places:	None
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Dunn's white gum (Eucalyptus dunnii) moist forest in north-east New South Wales and south-east Queensland	Endangered	Community may occur within area	In buffer area only
Grey box-grey gum wet forest of subtropical eastern Australia	Endangered	Community may occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Turnix melanogaster			
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Maccullochella ikei			
Clarence River Cod, Eastern Freshwater Cod [26170]	Endangered	Species or species habitat may occur within area	In feature area
Nannoperca oxleyana			
Oxleyan Pygmy Perch [64468]	Endangered	Species or species habitat may occur within area	In buffer area only
FROG			
Mixophyes fleayi			
Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area	In feature area
Mixophyes iteratus			
Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans			
Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
Phyllodes imperialis smithersi			
Pink Underwing Moth [86084]	Endangered	Breeding may occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Acronychia littoralis			
Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area	In buffer area only
Amyema plicatula			
[81879]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Arthraxon hispidus			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area	In feature area
Baloghia marmorata			
Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Bosistoa transversa			
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area	In feature area
Clematis fawcettii Stream Clematis [4311]	Vulnerable	Species or species habitat known to occur within area	In feature area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat may occur within area	In buffer area only
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat may occur within area	In buffer area only
Endiandra floydii Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat may occur within area	In feature area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat known to occur within area	In feature area
Hicksbeachia pinnatifolia Monkey Nut, Bopple Nut, Red Bopple, Red Bopple Nut, Red Nut, Beef Nut, Red Apple Nut, Red Boppel Nut, Ivory Silky Oak [21189]	Vulnerable	Species or species habitat known to occur within area	In feature area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area	In feature area
Myrsine richmondensis Purple-leaf Muttonwood, Lismore Muttonwood [83888]	Endangered	Species or species habitat known to occur within area	In feature area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat known to occur within area	In feature area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Plectranthus nitidus Nightcap Plectranthus, Silver Plectranthus [55742]	Endangered	Species or species habitat may occur within area	In buffer area only
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Syzygium moorei Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Bank of Australia		
Commonwealth Land - Commonwealth Bank of Australia [11276]	NSW	In buffer area only
Commonwealth Land - Commonwealth Bank of Australia [11272]	NSW	In buffer area only
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [11271]	NSW	In buffer area only
Commonwealth Land - Commonwealth Trading Bank of Australia [11269]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Broadcasting Corporation		
Commonwealth Land - Australian Broadcasting Corporation [15758]	NSW	In buffer area only
Commonwealth Land - Australian Broadcasting Corporation [15759]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Broadcasting Corporation [15760]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15531]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15701]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11290]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11258]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11277]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11256]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11274]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11273]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11270]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11278]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11268]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [11281]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [16162]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11280]	NSW	In buffer area only
Defence - LISMORE GRES DEPOT ; 41 RNSWR LISMORE [10061]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [16055]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16053]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16052]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11275]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11279]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [15446]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [12056]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16054]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [15943]	NSW	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus			
Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Boatharbour	Nature Reserve	NSW	In buffer area only
Wilson	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
330 kV Transmission Line, 205km in Length	2010/5326	Controlled Action	Completed	In buffer area only
Relocation of Grey-headed Flying Foxes	2006/2985	Controlled Action	Completed	In buffer area only
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
220 Lot Residential Subdivision and Development	2009/4705	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Bioregional Assessments			
SubRegion	BioRegion	Website	Buffer Status
Clarence-Moreton	Clarence-Moreton	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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APPENDIX 4: FLORA AND FAUNA SPECIES LISTS

Table 6: Flora Species List

	Plant Species	Common name	LSPS1	LSPS1	Planted Vegetation
	Native Species Rich (N)		**Ground Cover**	**Vegetation Layer**	**Vegetation Layer**
	Trees				
1.	*Araucaria cunninghamii*	Hoop Pine			c
2.	*#Corymbia citriodora*	Spotted Gum			c
3.	*#Corymbia torelliana*	Cadaghi			c
4.	*Cupaniopsis anacardioides*	Tuckeroo			c,m
5.	*Casuarina*	River Oak			c,m
6.	*Eucalyptus propinqua*	Grey Gum			c
7.	*Eucalyptus robusta*	Swamp Mahogany			m
8.	*Eucalyptus tereticornis*	Blue Gum			c
9.	*Flindersia schottiana*	Bumpy Ash			m
10.	*Grevillia robusta*	Silky Oak			c
11.	*Lophostemon suaveolens*	Swamp Turpentine			c
12.	*Melaleuca leucadendra*	Weeping Paperbark			c
13.	*Melaleuca quinquenervia*	Broad-leaved Paperbark			c
14.	*Melaleuca viminalis*	Weeping Bottlebrush			c,m
15.	*Melaleuca styphelioides*	Prickly-leaved Paperbark			c
16.	*Neolitsea australiensis*	Green Bolly Gum			s
17.	*Podocarpus elatus*	Browns pine			m
18.	*Premna serratifolia*	Creek Premna			c
19.	*Syzygium luehmannii*	Small Leaf Lillypilly			m,s
20.	*Syzygium australe*	Bush Cherry			m,s
21.	*Syzygium paniculatum*	Magenta Lillypilly			m,s
22.	*Waterhousea floribunda*	Weeping Lillypilly			c,m,s
23.	*#Xanthostemon chrysanthus*	Golden Penda			c,m,g
	Shrub				
1.	*#Gossia inophloia*	Blushing Beauty			s
2.	*Grevilia spp*	Broad Finger Leaf			m
	Grass/Grasslike				
1.	*Cynondon dactylon*	Green Couch Grass	80	g	g
2.	*Juncus usitatus*	Common Rush			g
3.	*Lomandra longifolia*	Mat-rush			g

	Plant Species	Common name	LSPS1	LSPS1	Planted Vegetation
	Forb				
1.	*Commelina cyanea*	Scurvey Weed			g
	Fern				
1.	*Nephrolepis cordifolia*	Fishbone Fern			g
2.	*Platycerium bifurcatum*	Elkhorn			m
3.	*Platycerium spp.*	Staghorn			m
	Other				
1.	*#Cordyline manner-suttoniae*	Broad-leafed Palm Lilly			s
2.	*Eleocharis spp.*	A spike-sedge			g
3.	*Persicaria decipiens*	Slender Knotweed			g
	Non-native spp richness (E)		**Exotic Cover%**	**Vegetation layer**	**Vegetation Layer**
	Trees				
1.	*Cinnamomum camphora*	Camphor Laurel			c
2.	*Citrus sinensis*	Orange Tree			s
3.	*Plumeria rubra*	Frangipani			s
4.	*Senna pendula*	Easter Cassia			m
	Shrubs				
1.	*Duranta erecta*	Sheena's Gold			s
2.	*Ochna serrulata*	Ochna			s
3.	*Rhaphiolepis indica*	India hawthorn			s
4.	**Grass/Grasslike**				
5.	*Axonopus compressus*	Carpet Grass	10	g	g
6.	*Cyperus rotundus*	Nut Grass			g
7.	*Eleusine indica*	Crowsfoot			g
8.	*Nandina domestica*	Heavenly Bamboo			s
9.	*Ophiopogon japonicus*	Mondo Grass			g
10.	*Pennisetum clandestinum*	Kikuyu Grass	10	g	g
11.	*Pennisetum macrourum*	African Feather Grass			g
12.	*Poa annua*	Annual Bluegrass			g
	Forbs				
1.	*Ageratum conyzoides*	Billygoat Weed			g
2.	*Bidens pilosa*	Cobblers Peg			g
3.	*Centella asiatica*	Pennywort			g
4.	*Cirsium vulgare*	Spear Thistle			g
5.	*Commelina benghalensis*	Hairy Commelina			g

	Plant Species	Common name	LSPS1	LSPS1	Planted Vegetation
6.	*Cuphea carthagenensis*	Columbian Waxweed			g
7.	*Emilia sonchifolia*	Emilia			g
8.	*Erigeron sumatrensis*	Tall Fleabane			g
9.	*Galinsoga quadriradiata*	Common chickweed			g
10.	*Gamochaeta coarctata*	Cudweed			g
11.	*Gamochaeta purpurea*	Purple Cudweed			g
12.	*Gladiolus spp.*	Gladiola			s
13.	*Hypochaeris radicata*	Cats Ear			g
14.	*Medicago polymorpha*	Burr Clover			g
15.	*Ranunculus trilobus*	Large Annual Buttercup			g
16.	*Raphanus raphanistrum*	Wild Radish			g
17.	*Rumex Crispus*	Curly Dock			g
18.	*Rumex sanguineus*	Red-veined Sorrel			g
19.	*Sansevieria trifasciata*	Mother-in-law Tongue			g
20.	*Senecio skirrodon*	Gravel Groundsel			
21.	*Sida rhombifolia*	Arrowleaf Sida			g
22.	*Sonchus asper*	Prickly Sowthistle			g
23.	*Solanum lycopersicum*	Tomato			g
24.	*Solanum nigrum*	Blackberry Nightshade			g
25.	*Solanum spp*	A Nightshade			g
26.	*Soliva anthemifolia*	Button Burweed			g
27.	*Strelitzia Reginae*	Bird of Paradise			s
28.	*Trifolium repens*	Clover			g
	Other				
1.	*Beaucarnea recurvata*	Ponytail			s
2.	*Musa spp.*	Banana Palm			s
3.	*Syngonium podophyllum*	Arrowhead Vine			g
4.	*Syngonium auitium*	Five Finger Plant			s
	High Threat Exotic (HTE)				
1.	*Asparagus aethiopicus*	Sprenger's Asparagus			g
2.	*Senecio madagascariensis*	Fireweed			g

Layers: e = emergent, c = canopy, m = mid, s = shrub, g = ground, N-V = Vulnerable BC Act and F-V = Vulnerable EPBC Act.

Table 7: Fauna Species List

No.	Scientific Name	Common Name	Status		Observation Type*	General Abundance within Development Site**
			BC	EPBC		
	Birds					
1.	*Entomyzon cyanotis*	Blue-faced Honeyeater			O, H	2
2.	*Platycercus eximius*	Eastern Rosella			O, H	1
3.	*Meliphaga lewinii*	Lewin's Honeyeater			O, H	1
4.	*Grallina cyanoleuca*	Magpie-lark			O, H	1
5.	*Chenonetta jubata*	Maned Duck			O, H	6
6.	*Vanellus miles*	Masked Lapwing			O, H	6
7.	*Manorina melanocephala*	Noisy Miner			O, H	2
8.	*Strepera versicolor*	Pied Currawong			O, H	1
9.	*Trichoglossus haematodus*	Rainbow Lorikeet			O, H	10
10.	*Corvus orru*	Torresian Crow			O, H	5

*Observation Type: O (Visual Observation), H (Heard whilst on site), E (Evidence recorded inc scats, tracks or markings), R (Recorded through the use of call detectors [level of confidence C: Confident, Pr: Probable, Po: Possible]).

** General Abundance: I (Individual record), UC (Uncommon, 2-5 records), C (Common occurrence on site >5 records)

APPENDIX 5: ASSESSMENT DETAILS

Staff Contributions

The following staff were involved in the compilation of this report.

Table 8: Staff Contributions

Name	Qualification	Title/Experience	Contribution
Kevin Wormington	PhD Ecology	Senior Ecologist	Flora and Fauna Surveys, Vegetation Mapping and Report Author.
Rob Townsend	BSc(hons) Ecology	Associate Environmental Advisor	Report Review
Alan McDonaugh	AD Commercial Arts	GIS Specialist	GIS and figure preparation

Scientific Licencing and Permits

Kleinfelder employees involved in the current study are licensed or approved under the *Biodiversity Conservation Act 2016* (License Number: SL100730, Expiry: 31 March 2023) and the *Animal Research Act 1985* to harm/trap/release protected native fauna and to pick for identification purposes native flora and to undertake fauna surveys.

Appendix B

BDAR Waiver Determination

Determination – Lismore South Public School Rebuild (SSD-69750458) – BDAR not required

Determination under clause 7.9(2) of the Biodiversity Conservation Act 2016

I, Gabrielle Pietrini, Director North East, of the Biodiversity, Conservation and Science Group of the NSW Department of Climate Change, Energy, the Environment and Water, under clause 7.9(2) of the *Biodiversity Conservation Act 2016*, determine that based on the information provided in the BDAR waiver application dated 2 May 2024 and the preliminary tree assessment dated 24 July 2024, it can be concluded that the proposed development is not likely to have any significant impact on biodiversity values and therefore a biodiversity development assessment report (BDAR) **is not required**.

Proposed development means the development as described in Schedule 1. If the proposed development changes so that it is no longer consistent with this description, a further request to waive the requirement for a BDAR must be lodged or a BDAR prepared.

If you do not lodge the development application related to this determination for the proposed development within 2 years of the issue date of this determination, you must either prepare a BDAR or lodge a new request to have the BDAR requirement waived.

30 July 2024

GABRIELLE PIETRINI
Director North East
Biodiversity, Conservation and Science Group
Department of Climate Change, Energy, the Environment and Water

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Date

SCHEDULE 1 – Description of the proposed development

Demolition of existing buildings and structures and retention of Building K and COLA and construction of a new school facilities including new a school building, hall, library, administration, new pre-school, landscaping and associated works, as set out in the *BDAR Waiver Application Lismore South Public School Corner Phyllis and Wilson Streets, South Lismore Geolink 2024*.