



# **Attachment 8 to Item 10.1.1.**

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## **Biodiversity Development Assessment Report**

Date of meeting: 10 December 2024  
Location: Council Chambers  
Time: 6:30pm





# ESEA

Environmental Services & Education Australia

# Biodiversity Development Assessment Report

## Redbank Expansion Area (Kemsley Park)

9 July 2024

Version 2.0

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<b>Client Project Manager</b>	Mark Regent
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**REDBANK**  
COMMUNITIES

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9 July 2024

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Via email: [markregent@redbankcommunities.com.au](mailto:markregent@redbankcommunities.com.au)

Dear Mark

## Biodiversity Development Assessment Report – Redbank Expansion Area (Kemsley Park)

This Biodiversity Development Assessment Report has been prepared by Environmental Services & Education Australia to support a Gateway Planning Proposal for the rezoning of Redbank's Expansion Area (Kemsley Park), located at 322 Grose Vale Road, Grose Vale NSW 2753 (Lot 260 DP1237271).

The subject site is a 34 ha parcel of land that has historically been utilised as grazing paddock for cattle and possesses a single residential dwelling. The site features an undulating landform and a network of feeder drains leading to several man-made dams. Several stands of remnant native canopy vegetation are present, as well as a planted driveway grove, but the site is primarily characterised by highly grazed weedy grassland.

The subject site requires rezoning from RU4 – Rural to residential zoning, prior to the lodgement of a development application for approximately 300 residential lots. This will connect to and complete Redbank's master-planned community. Works would include the removal of native canopy trees, bulk earthworks, and the installation of roads and required infrastructure.

The removal of native vegetation from mapped Biodiversity Values areas triggers the Biodiversity Offset Scheme and as such, a Biodiversity Development Assessment Report is required to assess the impacts of the proposed development.

Vegetation within the subject site was found to be consistent with PCT 3320 - Cumberland Shale Plains Woodland. It is a poor condition representation of the threatened ecological community Cumberland Plain Woodland in the Sydney Basin Bioregion, which is listed as Critically Endangered under the *Biodiversity Conservation Act 2015*. This Critically Endangered Ecological Community cumulatively covers 8.9 ha, occurring as three distinct patches. The final offset requirements for the proposed development are outlined below.

The subject site is considered to provide habitat important to the survival of several threatened species under the *Biodiversity Conservation Act 2015*. These species have been considered within the Biodiversity Assessment Method Calculator, and the species credit requirements to offset impacts to habitat for these threatened species are outlined below.

This report recommends mitigation measures to prevent any indirect impacts on retained vegetation, native fauna, and ecosystems both within the subject site and in the surrounding environment.

Table 0-1 Ecosystem credit class and matching credit profile

Ecosystem credit	Attributes shared with matching credits							
	PCT name	Vegetation zone name	Vegetation integrity loss	Total Area (Ha) to be removed	Sensitivity to loss	Biodiversity risk weighting	Potential SAll	Ecosystem credits
	3320 - Cumberland Shale Plains Woodland	Zone 1 – Poor	19.1	4.35	Very high sensitivity to loss	2.5	True	52
	3320 - Cumberland Shale Plains Woodland	Zone 2 - Poor	14.1	2.34	Very high sensitivity to loss	2.5	True	0
	3320 - Cumberland Shale Plains Woodland	Zone 3 - Degraded	22.7	1.03	Very high sensitivity to loss	2.5	True	15
<b>Total</b>								<b>67</b>

Table 0-2 Species credit class and matching credit profile

Species credit	Attributes shared with matching credits						
	Species/PCT/TEC Name	Habitat condition (vegetation integrity) loss	Area / Count	Sensitivity to loss	Biodiversity risk weighting	Potential SAll	Species credits
	Green and Golden Bell Frog		3 ha	High	2.00	False	30
	Square-tailed Kite		7.7 ha	Moderate	1.50	False	52
	Southern Myotis		5.9 ha	High	2.00	False	57
	Matted Bush-pea		7.7 ha	High	2.00	False	69

Yours sincerely

**Clayton Woods**  
 Director - Environmental Services & Education PTY LTD  
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## SHORTENED FORMS

BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	Biodiversity Conservation Act 2016 (NSW)
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offsets Scheme
CEEC	critically endangered ecological community
EC	ecological community listed under the EPBC Act
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EEC	endangered ecological community
HTW	high threat weed
IBRA	Interim Biogeographic Regionalisation for Australia
MNES	matters of national environmental significance
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NSW	New South Wales
PCT	plant community type
SAIL	serious and irreversible impact
SEARs	Secretary's Environmental Assessment Requirements
TBDC	Threatened Biodiversity Data Collection
TEC	threatened ecological community
VEC	vulnerable ecological community
Vegetation SEPP	State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (NSW)

## DECLARATIONS

Certification under clause 6.15 *Biodiversity Conservation Act 2016*

I certify that this report has been prepared based on the requirements of, and information provided under, the Biodiversity Assessment Method and clause 6.15 of the *Biodiversity Conservation Act 2016* (BC Act).

Signature: [REDACTED]

Date: \_\_\_\_\_

BAM Assessor Accreditation no: BAAS17054

Details and experience of author/s and contributors

### Authors and contributors

Name	BAM Assessor Accreditation no. (if relevant)	Position/Role	Tasks performed	Relevant qualifications
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Clayton Woods		Director / Principal Ecologist - ESEA	Report preparation Document review Figure preparation BAM plot surveys Targeted threatened species surveys	BSc (Hons) Ecology and Environmental Science – 1 <sup>st</sup> Class, University of Edinburgh

### Conflict of interest

I declare that I have considered the circumstances and there is no actual, perceived, or potential conflict of interest.

This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.

Signature: [REDACTED]

Date: \_\_\_\_\_

BAM Assessor Accreditation no: BAAS17054



## 1 INTRODUCTION

### 1.1 Proposed Development

#### 1.1.1 Development overview

This Biodiversity Development Assessment Report (BDAR) has been prepared by Environmental Services & Education Australia (ESEA) to support a Gateway Planning Proposal for the rezoning of Redbank's Expansion Area (Kemsley Park), located at 322 Grose Vale Road, Grose Vale NSW 2753.

The subject site requires rezoning from RU4 – Rural to residential zoning, prior to the lodgement of a Development Application for approximately 300 residential lots. This will connect to and complete Redbank's master-planned community.

The activity requires consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

#### 1.1.2 Location

The subject site, known as the Redbank Expansion Area (Kemsley Park) is a 34 ha parcel of land described as Lot 260 DP1237271 (Figure 1-1). It is also identified as 322 Grose Vale Road, Grose Vale NSW 2753. It is located above the Hawkesbury River, approximately 55km northwest of Sydney CBD, 12km northwest of Windsor town centre, and 1km west of North Richmond town centre.

Redbank's Expansion Area (Kemsley Park) is in the Hawkesbury City Council local government area (LGA) and Hawkesbury City Council (Council) is the approval authority. The site occurs entirely within land zoned RU4 - Primary Production Small Lots under the *Hawkesbury Local Environmental Plan 2012* (LEP).

The subject site does not occur within a Sydney Region Growth Centre and is not within subject lands for bio-certification.

The site features an undulating landform and a network of feeder drains leading to several man-made dams. It has historically been utilised as grazing paddock for cattle and possesses a single residential dwelling. The site comprises part of the curtilage of the former Yobarnie Keyline Farm, which is listed on the State Heritage Register. The farm was one of the two properties in which the Keyline system was first developed by P. A. Yeomans, a farmer and engineer. The Keyline system refers to a system of soil improvement, erosion control, water storage, cultivation and irrigation on undulating topography which has since been adopted by farmers worldwide. The elements from the Keyline system can be physically seen through the remnant dams and the interconnected feeder and irrigation drains across the subject site.

The site possesses three distinct stands of remnant native canopy vegetation, a planted driveway grove, and a dwelling house, but is primarily characterised by highly grazed weedy grassland. The area has not been subject to any environmental works such as revegetation with native species replanting.

The closest conservation lands to the proposed subject site are Redbank Creek, located approximately 200 m to the north; Belmont Park, located approximately 750 m to the east; and the Hawkesbury River, located 1.9 km southeast.

#### 1.1.3 Proposed development and the subject land

Redbank Communities intends to lodge a Gateway Planning Proposal with Hawkesbury City Council to rezone Redbank's Expansion Area (Kemsley Park) from RU4 – Rural to residential zoning. Redbank subsequently intends to lodge a development application for approximately 300 residential lots, connecting to and completing Redbank's master-planned community (Figure 1-2 and Figure 1-3).

Redbank has been progressively subdividing the surrounding 180 ha Redbank North Richmond residential estate and constructing infrastructure to facilitate the release of approximately 1,400 dwellings since the initial rezoning for urban development in 2014. The ‘Southern Valley’ land was the last remaining major subdivision in the staged subdivision of the North Richmond urban release area.

The subsequent Redbank Expansion Area (Kemsley Park) subdivision development application would remove vegetation present within the site. Additional works would include cut and fill bulk earthworks; subdivision into approximately 300 lots; construction of local roads extending from the approved road network; civil works including lot benching; creation of inter-allotment drainage and construction of retaining walls; extension of utility services; and landscaping and public domain works. Temporary infrastructure would be required during construction, including construction park-up areas, stockpiles, storage zones, and temporary construction buildings.





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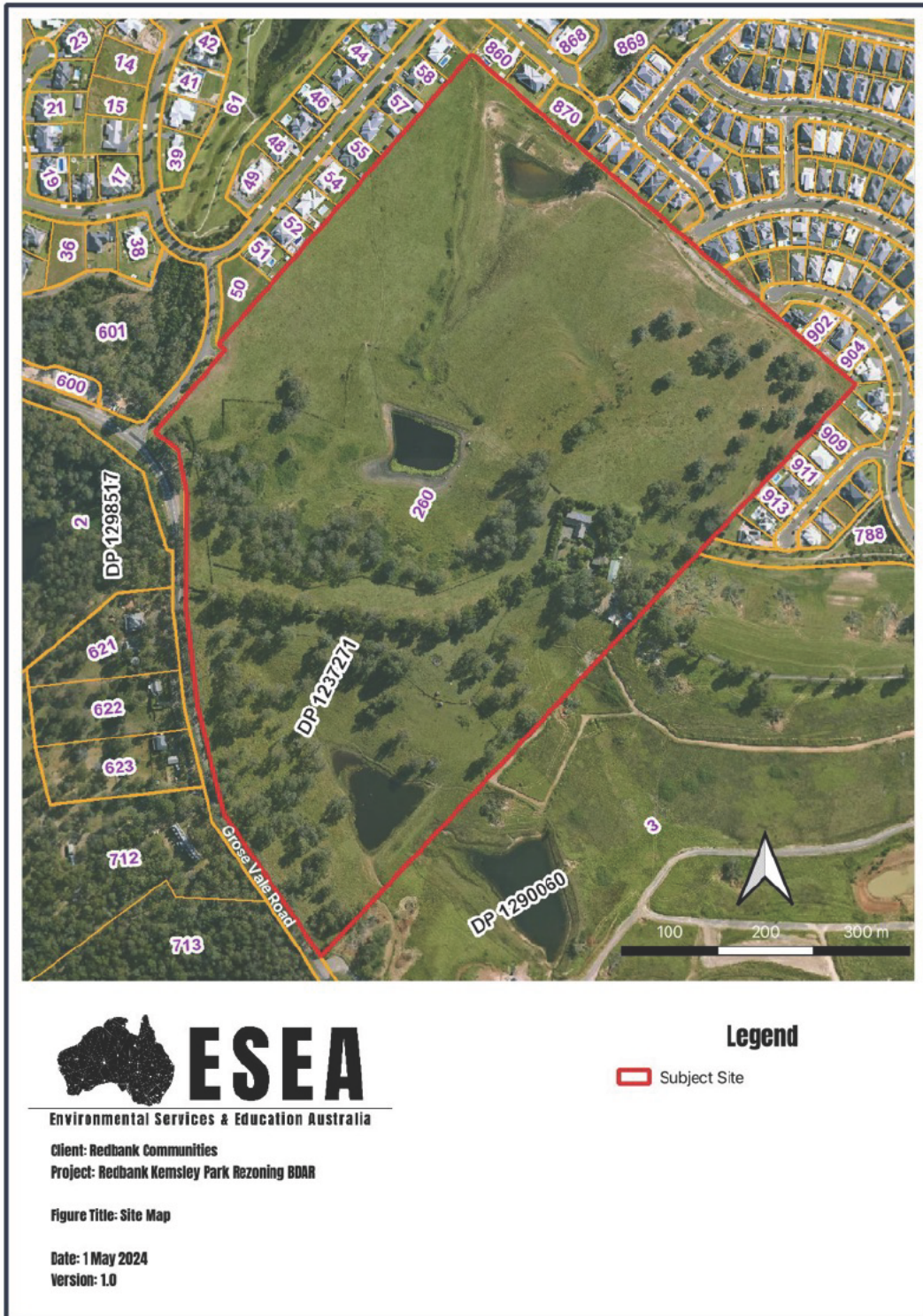


Figure 1-1 Site Map



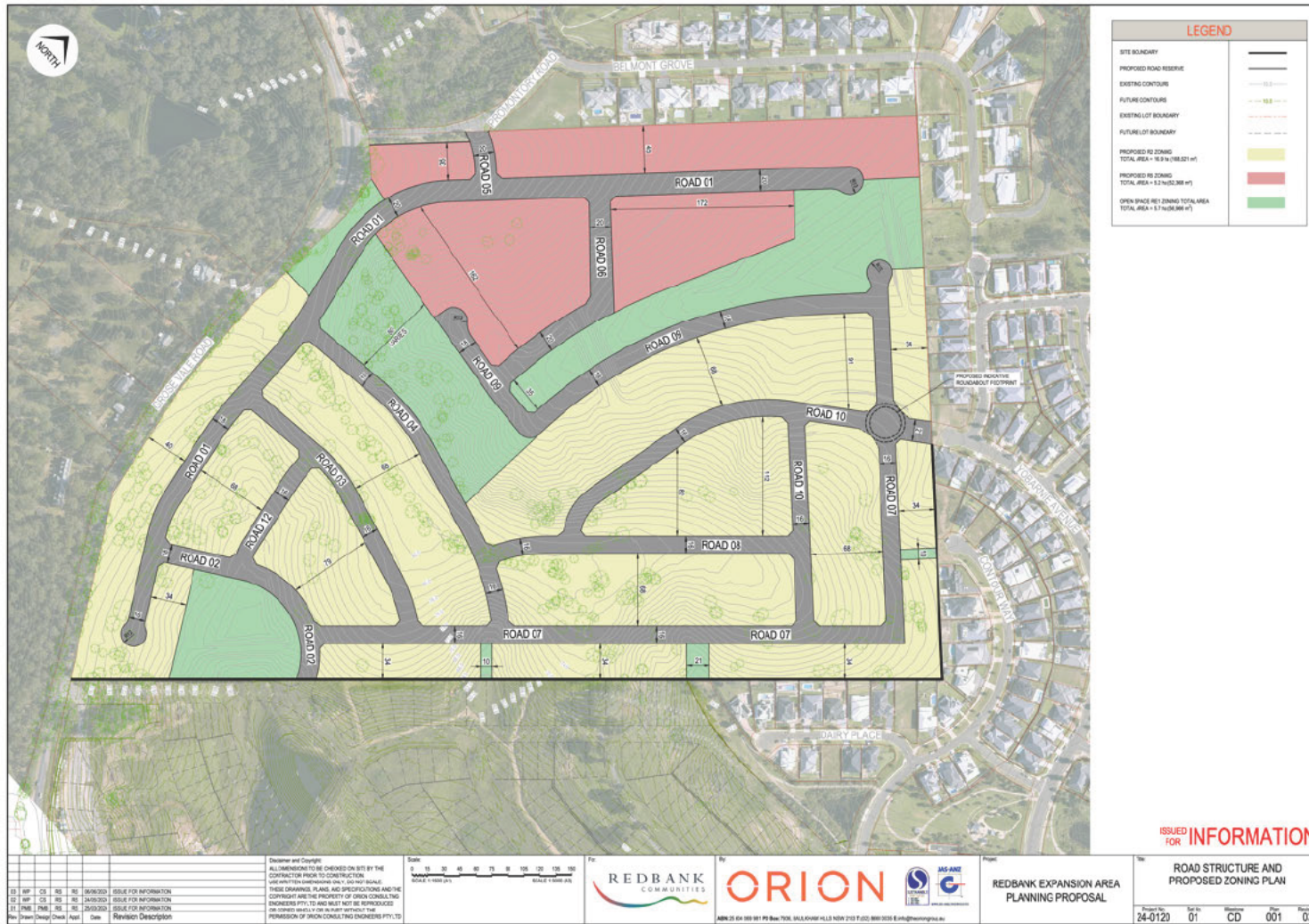


Figure 1-2 Redbank 'Kemsley Park' Structure Plan





Figure 1-3 Redbank Expansion Area (Kemsley Park) Master Plan

## 1.2 Biodiversity Offset Scheme Entry

The proposed development triggers entry into the Biodiversity Offsets Scheme (BOS) by exceeding both the Biodiversity Values Map threshold (Figure 1-4) and the threshold for clearing above which the BOS applies.

## 1.3 Excluded Impacts

Clause 6.8(3) of the *Biodiversity Conservation Act 2016* (BC Act) specifies that the BAM is to exclude the assessment of the impacts of any clearing of native vegetation and loss of habitat on category 1 - exempt land (as defined in Part 5A of the *Local Land Services Act 2013* (LLS Act)), other than prescribed impacts (as defined in clause 6.1 of the *Biodiversity Conservation Regulation 2017* (BC Regulation)).

The native vegetation regulatory map indicates that the subject site is in land excluded from the *Local Land Services Act 2013* (LLS Act); therefore exempt land does not apply to the proposal.

## 1.4 Matters of National Environmental Significance

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a regime for assessing and regulating the environmental impact of activities (including development) where a Matters of National Environmental Significance (MNES) may be affected. Under the EPBC Act, any action which has, will have, or is likely to have a significant impact on a matter of MNES is defined as a “controlled action”, and requires approval from the Minister.

The process includes undertaking an Assessment of Significance for listed threatened species and ecological communities that represent a matter of MNES that will be impacted as a result of the proposed action. The Significant Impact Guidelines 1.1 – Matter of National Environmental Significance’ published by DAWE (2009a) provide overarching guidance on determining whether an action is likely to have a significant impact on an MNES.

The following MNES were assessed in accordance with the Significant Impact Guidelines:

- *Pteropus poliocephalus* (Grey-headed Flying Fox)
- *Lathamus discolor* (Swift Parrot)

The assessment of these species against the Significant Impact Guidelines is presented in Section 10. The results of these assessments determined that the proposed development is not deemed a controlled action and does not need referral under the EPBC Act.

## 1.5 Information Sources

The following information sources were used in the preparation of this report:

- Imagery:
  - Aerial imagery: MetroMap 1 April 2024
- Australian Government Department of Climate Change, Energy, the Environment and Water
  - Protected Matters Search Tool: <https://pmst.awe.gov.au/>
  - Species Profiles and Threats Database (SPRAT): <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>
  - Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (Department of the Environment, Water, Heritage and the Arts, 2013 EPBC Act Policy Statement)
  - Interim Biogeographic Regionalisation for Australia (IBRA) version 7.0

- NSW Department of Planning, Industry and Environment (DPIE), Environment, Energy and Science (EES) Group, formerly the Office of Environment and Heritage (OEH)
  - NSW (Mitchell) Landscapes - version 3.1
  - Biodiversity Values Map: <https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap>
  - NSW State Vegetation Type Map: <https://datasets.seed.nsw.gov.au/dataset/95437fbd-2ef7-44df-8579-d7a64402d42d>
  - BioNet Threatened Biodiversity Data Collection
  - BioNet Vegetation Classification
  - NSW Spatial Services Historical Imagery Viewer: [https://www.spatial.nsw.gov.au/products\\_and\\_services/aerial\\_and\\_historical\\_imagery](https://www.spatial.nsw.gov.au/products_and_services/aerial_and_historical_imagery)
- Ecological Australia (2022) Redbank Southern Valley Biodiversity Development Assessment Report.
- Ecological Australia (2022) Redbank Southern Valley – Riparian Assessment
- Molino Stewart (2022) Grose Vale Road Upgrade West Biodiversity Assessment





Figure 1-4 Biodiversity Values Map



## 2 METHODS

### 2.1 Site Context Methods

#### 2.1.1 Landscape features

Landscape features relevant to the proposal have been assessed from within a 1500 m buffer zone (the BDAR assessment area) around the subject site.

In accordance with Sections 3.1 and 3.2 of the BAM (2020) assessment and mapping of the landscape features have been undertaken as summarised in Table 3-1 and shown in Figure 2-1.

#### 2.1.2 Native vegetation cover

Native vegetation cover within the subject site must be assessed in relation to native vegetation cover across a broader BDAR assessment area. The cover of native vegetation within the BDAR assessment area is required to determine the context of the subject land. The cover of native vegetation was assessed via desktop assessment as follows:

- Clipping the NSW State Vegetation Type Map within the greater BDAR assessment area using QGIS;
- Editing the shapefile to remove areas of vegetation no longer evident, based on up-to-date satellite imagery, and the addition of new polygons identifying areas of vegetation not represented in mapping.

An on-site field assessment was then conducted to refine the result of the desktop assessment and determine the floral composition of the site. The flora survey consisted of irregular traverses within the assessment area, ensuring comprehensive coverage of all vegetation present. Physical data including plant species composition, health, and weed coverage were recorded.

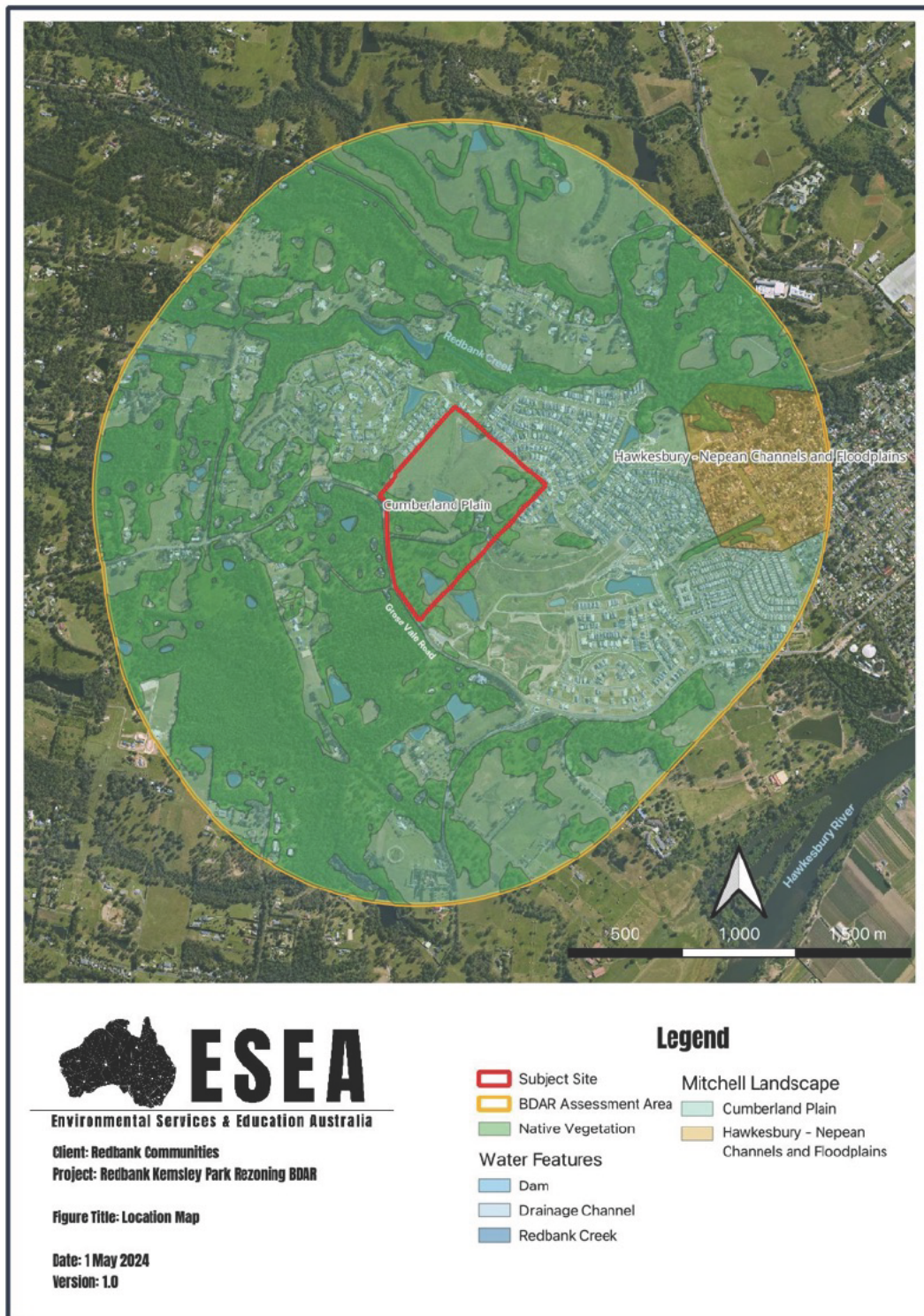


Figure 2-1 Location Map

## 2.2 Native Vegetation, Threatened Ecological Communities, and Vegetation Integrity Methods

### 2.2.1 Plot-based vegetation survey

Floristic were carried out on Monday 22<sup>nd</sup>, Tuesday 23<sup>rd</sup> and Tuesday 30<sup>th</sup> April 2024. Identification of plant community types (PCTs) within the subject land was confirmed during site surveys with reference to the BioNet Vegetation Classification database and data collected from floristic and site integrity plots/transects in accordance with Section 2 of the BAM (2020).

A total of four full-floristic vegetation plots were surveyed to obtain an accurate representation of the vegetation present.

### 2.2.2 Vegetation integrity survey

The vegetation integrity survey was conducted as per the BAM 2020 Operation Manual. Four plots were conducted within the subject site. These plots assessed three distinct patches of native vegetation within the subject site of differing apparent conditions, wherein two plots were conducted for the larger 4.4 ha patch of native vegetation, and one plot was conducted for each of the other two patches of 2.4 ha and 2.1 ha.



### 3 SITE CONTEXT

#### 3.1 Assessment Area

Landscape features relevant to the proposal have been assessed from within a 1500 m buffer zone (the BDAR assessment area) around the subject land, which covers 829 ha (Figure 2-1).

#### 3.2 Landscape Features

In accordance with Sections 3.1 and 3.2 of the BAM (2020), landscape features identified within the subject land and BDAR assessment area are described in Table 3-1 and shown in Figure 2-1.

Figure 2-1 illustrates the extent of native vegetation within the BDAR assessment area.

**Table 3-1 Landscape assessment**

Feature	Subject site	BDAR assessment area relevance
IBRA bioregion	Sydney Basin	Sydney Basin
IBRA subregion	Cumberland	Cumberland
NSW (Mitchell) landscapes	Cumberland Plain	The majority of the assessment area is located on the Cumberland Plain landscape type, with the exception of a small area in the east, which is located on Hawkesbury-Nepean Channels and Floodplains.
Rivers and streams	<p>Three dams are present within the subject site.</p> <p>According to NSW Water Management (General) Regulation 2018 Hydroline Spatial Data, a network of 1<sup>st</sup> order drainage lines occurs within the subject site.</p> <p>DWE attended a site visit in 2009 and agreed that these watercourses did not meet the definition of a river under the Water Management Act 2000 and therefore could be removed as constraints to future development.</p>	Redbank Creek, a fifth order stream, and its tributaries are mapped to the north of the subject site. The Hawkesbury River, a ninth order stream, and its tributaries are mapped to the southwest (Figure 2-1).
Wetlands	The subject site does not contain estuaries or wetlands	The BDAR assessment area does not contain estuaries, Ramsar Wetlands, or Nationally Important Wetlands.
Connectivity	The subject site is largely cleared and connectivity is limited. Some connectivity for highly mobile species may be present between the patches of remnant native vegetation and dams present within the subject site.	<p>The subject site provides limited connectivity to the north and east due to the surrounding urbanised environment which includes established areas of the Redbank master-planned community, as well as areas which are currently undergoing bulk earthworks and infrastructure development. Some connectivity may be present for highly mobile species that can reach Redbank Creek to the north.</p> <p>To the south and west, connectivity is present between patches of remnant native vegetation within the subject site, and large patches of native vegetation present along the southern and southwestern boundaries. These are separated from the subject site by fences and Grose Vale</p>

		Road. However, connectivity for highly mobile species may be present in the canopy.
Geological features	The subject site does not contain any geological features of significance, including karst, caves, crevices, or cliffs.	No karsts, caves, crevices, cliffs, or areas of geological significance have been identified within the BDAR assessment area
Areas of outstanding biodiversity value	The subject site does not contain any Areas of Outstanding Biodiversity Value.	No Areas of Outstanding Biodiversity Value occur within the BDAR assessment area.
Native vegetation cover	The subject site is approximately 34 ha and contains approximately 8.92 ha of native vegetation	The BDAR assessment area including the subject land is approximately 829 ha. The total of native vegetation cover in the BDAR assessment area is approximately 352 ha, which equates to 42%.

### 3.3 Native Vegetation Cover

The BDAR assessment area including the subject land is approximately 829 ha. The total native vegetation cover in the BDAR assessment area is approximately 352 ha, which equates to 42%. The subject site is approximately 34 ha and contains approximately 8.92 ha of native vegetation.

### 3.4 Patch Size

A patch is an area of native vegetation that occurs within the BDAR assessment area and includes native vegetation that has a gap of less than 100 m from the next area of native vegetation (or  $\leq 30$  m for non-woody ecosystems). Patch size was calculated using available vegetation mapping for all patches of intact native vegetation on and adjoining the subject site. Patch size was assigned to one of four classes (<5 ha, 5-24 ha, 25-100 ha or  $\geq 100$  ha).

A patch size >100 ha was determined for the subject site and entered in the BAMC for all vegetation zones.

## 4 NATIVE VEGETATION, THREATENED ECOLOGICAL COMMUNITIES AND VEGETATION INTEGRITY

Large patches of native canopy vegetation in poor condition are present within three distinct areas throughout the subject site, herein identified as Zones 1, 2, and 3. The subject site also contains a planted grove of trees along a driveway leading to the existing dwelling house.

### 4.1 Native Vegetation Extent

Table 4-1 summarises the extent of native vegetation cover within the assessment area. Figure 2-1 shows native vegetation cover within the assessment area.

Table 4-1 Native vegetation extent

Assessment area (ha)	829 ha
Total area of native vegetation cover (ha)	352 ha
Percentage of native vegetation cover (%)	42%
Class (0-10, >10-30, >30-70 or >70%)	>30-70

#### 4.1.1 Changes to mapped native vegetation extent

According to the NSW State Vegetation Type Mapping, one PCT is mapped as occurring within the subject site (Figure 4-2):

- PCT 3320 – Cumberland Shale Plains Woodland

Native vegetation extent within the subject site has been refined based on data collected during field surveys. The extent of mapped native vegetation has been reduced to exclude areas of the subject site that contain only introduced grasses and weeds.

Native vegetation extent within the subject site covers an area of approximately 8.92 ha. The remaining 25 ha of land within the subject site is characterised by heavily grazed, weedy groundcover, or planted vegetation occurring along the residential driveway and garden areas.

#### 4.1.2 Areas that are not native vegetation

Non-native vegetation within the subject land extends over approximately 23.2 ha of the subject site. This consists of introduced grasses and weeds that is subject to regular grazing by cattle. Table 4-2 Photo-plate 1 illustrates the nature of non-native vegetation within the subject site.



**Table 4-2 Photo-plate 1: Non-native vegetation in the subject site**



### 4.1.3 Planted native and non-native vegetation

Planted vegetation within the subject land extends over approximately 1.28 ha of the subject site and occurs within a grove running the length of the driveway. It also occurs within the garden area of the existing residential dwelling. This vegetation zone consists of an assortment of introduced and native canopy tree species, introduced grasses and weed groundcover. Table 4-3 Photo-plate 2 illustrates the nature of planted vegetation within the subject site.



**Table 4-3 Photo-plate 2: Planted native vegetation within the subject site**



Due to the presence of planted native vegetation within the development site, vegetation identified as ‘Planted native and Exotic cover’ was assessed under the streamlined assessment module for planted native vegetation in accordance with Appendix D of BAM 2020 (Table 4-4). This appendix contains a decision-making key that provides a framework for the assessment of planted native vegetation.

Areas of planted native vegetation were assessed for threatened species habitat using the same methods applied for the rest of the development site. These results are detailed in Section 5.

Measures to mitigate and manage impacts to planted native vegetation are provided in Section 7. No species credits are required to offset the proposed impacts to planted native vegetation.

**Table 4-4 Assessment of planted native vegetation in accordance with Appendix D of the BAM 2020**

Question	Response and justification
<p>1 Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal?</p>	<p>No - canopy species are clearly planted given their species, size and location between a fence line and driveway + forming a visual screen around the dwelling house garden. This is</p>

	<ul style="list-style-type: none"> <li>■ Yes – the planted native vegetation must be allocated to the best-fit PCT and the BAM must be applied.</li> <li>■ No – Go to 2.</li> </ul>	<p>supported by historical imagery for the site which shows that vegetation in the area was planted sometime between 1965 and 1975 (Figure 4-1). No remnant native vegetation is present in the area. Where remnant native vegetation was adjacent to the planted native vegetation, it was mapped to a PCT rather than as part of the planted native polygon.</p>
2	<p>Is the planted native vegetation:</p> <ul style="list-style-type: none"> <li>■ Planted for the purpose of environmental rehabilitation or restoration under an existing conservation obligation listed in BAM Section 11.9(2.), and</li> <li>■ The primary objective was to replace or regenerate a plant community type of a threatened plant species or its habitat? <ul style="list-style-type: none"> <li>■ Yes – the planted native vegetation must be assessed in accordance with Chapters 4 and 5 of the BAM</li> <li>■ No – Go to 3.</li> </ul> </li> </ul>	<p>No - the location of the trees indicates that they were planted for driveway amenity and landscaping around the residential dwelling.</p>
3	<p>Is the planted / translocated native vegetation individuals of a threatened species or other native species planted / translocated for the purpose of providing threatened species habitat under one of the following:</p> <ul style="list-style-type: none"> <li>■ A species recovery project</li> <li>■ Saving our Species project</li> <li>■ Other types of government funded restoration project</li> <li>■ Condition of consent for a development approval that required those species to be planted or translocated for the purpose of providing threatened species habitat</li> <li>■ Legal obligation as part of a condition of ruling of court. This includes regulatory directed or ordered remedial plantings (e.g. Remediation Order for clearing without consent issued under the BC Act or the Native Vegetation Act)</li> <li>■ Ecological rehabilitation to re-establish a PCT or TEC that was, or is carried out under a mine operations plan, or</li> <li>■ Approved vegetation management plan (e.g. as required as part of a Controlled Activity Approval for works on waterfront land under the NSW Water Management Act 2000)? <ul style="list-style-type: none"> <li>■ Yes – the planted native vegetation must be assessed in accordance with Chapters 4 and 5 of the BAM</li> <li>■ No – Go to 4</li> </ul> </li> </ul>	<p>No - the native species present are not threatened species and are not known to have been planted for rehabilitation purposes. It is unlikely that they were planted or translocated for the purposes outlined in Question 3.</p>
4	<p>Was the planted native vegetation (including individuals of a threatened flora species) undertaken voluntarily for revegetation, environmental rehabilitation or restoration within a legal obligation to secure or provide for management of the native vegetation?</p> <ul style="list-style-type: none"> <li>■ Yes – Go to D.2 Assessment of planted native vegetation for threatened species habitat (the use of Chapters 4 and 5 of the BAM are not required to be applied)</li> <li>■ No – Go to 5.</li> </ul>	<p>No - the planted native vegetation forms part of the landscaping for the driveway and residential dwelling.</p>



5	<p>Is the planted native vegetation (including individuals of a threatened flora species) planted for functional, aesthetic, horticultural or plantation forestry purposes? This includes examples such as; windbreaks in agricultural landscapes, roadside plantings (including street trees, median stripes, roadside batters), landscaping in parks, gardens and sport fields/complexes, macadamia plantations or teatree farms?</p> <ul style="list-style-type: none"> <li>■ Yes – Go to D.2 Assessment of planted native vegetation for threatened species habitat (the use of Chapters 4 and 5 of the BAM are not required to be applied)</li> <li>■ No – Go to 6.</li> </ul>	<p>Yes - the planted native vegetation appears to be amenity plantings along a driveway and surrounding the garden of the existing residential dwelling.</p>
6	<p>Is the planted native vegetation a species listed as a widely cultivated native species N/A on a list approved by the Secretary of the Department (or an officer authorised by the Secretary)?</p> <ul style="list-style-type: none"> <li>■ Yes – Go to D.2 Assessment of planted native vegetation for threatened species habitat (the use of Chapters 4 and 5 of the BAM are not required to be applied)</li> <li>■ No – There may be other types of occurrences of planted native vegetation that do not easily fit into the decision-making key above.</li> </ul>	<p>N/A</p>

#### 4.1.3.1 Assessment of planted native vegetation for threatened species habitat

An assessment of the potential for the planted native vegetation to provide habitat for threatened species is required. If there is evidence that threatened species are using the planted native vegetation as habitat, Section 8.4 of the BAM must be applied to mitigate and manage impacts on these species. Species credits are not required to offset the proposed impacts.

Threatened flora and fauna species assessed under the BAM were considered throughout the entire subject land, including within areas of planted native and exotic vegetation, and human-made structures. Refer to Section 5 (Threatened Species) and Section 0 (Prescribed impacts). This assessment concluded that the planted native vegetation assessed in this section does not:

- Provide habitat for threatened species, and
- Application of BAM Section 8.4 is not required.

Photographic plates are provided in Table 4-3.

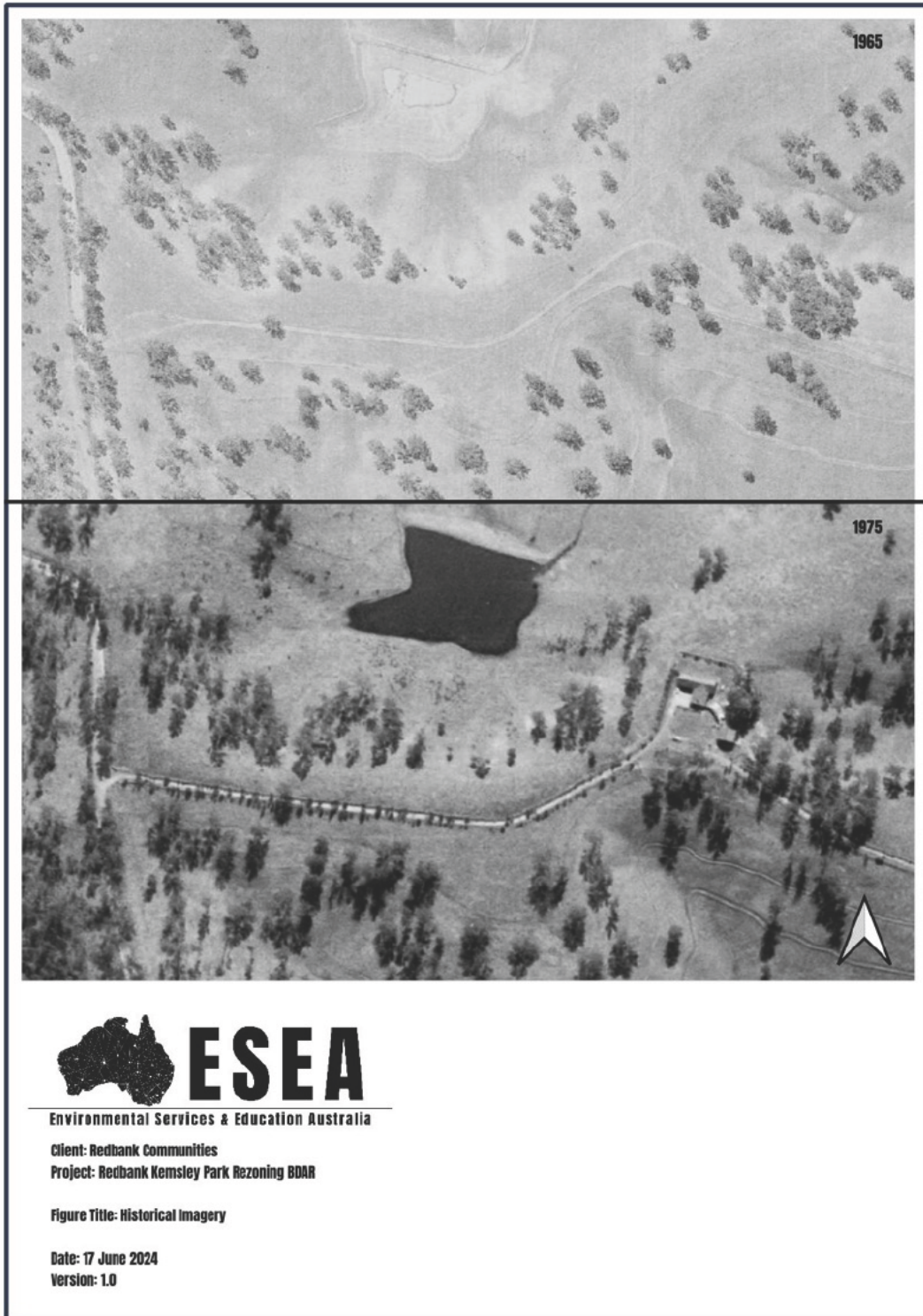


Figure 4-1 Historical Imagery Showing Planting of Vegetation Along Driveway Grove

## 4.2 Plant Community Types

### 4.2.1 Overview

Identification of plant community types (PCTs) within the subject site was confirmed during site surveys with reference to the BioNet Vegetation Classification database and data collected from floristic and site integrity plots/transects in accordance with Section 2 of the BAM (2020).

Data was collected from four plots/transects in order to obtain a representation of the vegetation present from within the patches of remnant native vegetation.

Various attributes were considered in combination to assign vegetation to the best fit PCT. This included dominant species in each stratum and relative abundance, community composition, soils and landscape position. Reference was made to the PCT descriptions in the BioNet Vegetation Classification and the final determinations for TECs.

Areas of native vegetation within the subject site were identified as PCT 3320 – Cumberland Shale Plains Woodland in varying degraded conditions.

PCT 3320 – Cumberland Shale Plains Woodland was selected for the following reasons:

- Presence of characteristic canopy species, *Eucalyptus tereticornis* (Forest Red Gum) and *Eucalyptus crebra* (Narrow-leaved Ironbark),
- Presence of regrowth *E. tereticornis* and *E. crebra* in Vegetation Zone 3,
- Soil type and landscape position typically associated with this PCT, i.e., clay/loam soils on the Cumberland Plain at altitudes mostly below 150 m.
- IBRA region and sub-region: Sydney Basin; Cumberland
- Most of the vegetation within the subject site was previously mapped as PCT 3320 (OEH 2016) and identified as similar (PCT 849) in previous ecological assessments of the locality (Ecological 2022).

PCT ID	PCT Name	Area within subject land (ha)
3320	Cumberland Shale Plains Woodland	8.92
Total area		8.92

### 4.2.2 PCT 3320 Cumberland Shale Plains Woodland

#### 4.2.2.1.1 PCT overview

PCT ID	3320
PCT name	Cumberland Shale Plains Woodland
Vegetation formation	KF_CH3 Grassy Woodlands
Vegetation class	Coastal Valley Grassy Woodlands
Per cent cleared value (%)	93.03%
Extent within subject land (ha)	8.92

PCT 3320 within the subject area generally comprises remnant canopy trees overlying grazed or disturbed exotic groundcover. Minimal / no midstratum vegetation is present (see photos 1 - 4). The extent of PCT 3320 has been revised from that depicted on the NSW State Vegetation Type Map in order to remove areas that comprise only weeds or introduced grassland.



Three condition zones have been attributed to PCT 3320 in the subject site, which extends over 8.92 ha in total. The patch size for native vegetation within the BDAR assessment area has been estimated as >100 ha.



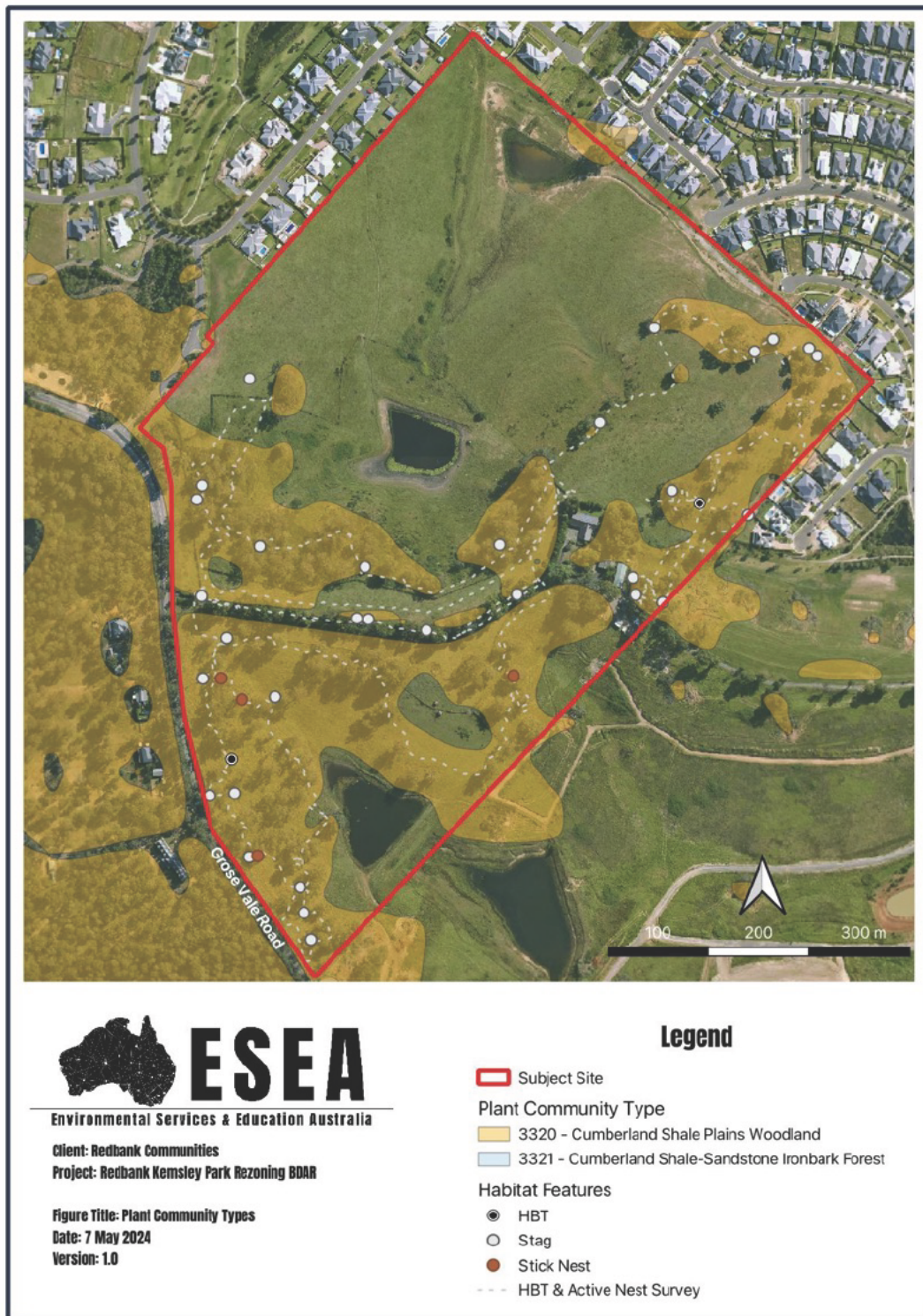


Figure 4-2 Plant Community Type Map