

Report

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# **Naturaliste Heights Residential Development - Lot 9020 Martingale Road, Dunsborough, WA**

**Dunsborough Joint Venture**

Offset Area Management Plan

July 2025  
(Rev 1)

Prepared by: EDS Environmental

### Declaration of Accuracy

- EPBC number: 2018/8278
- Project name: Residential Development Lot 9018 Martingale Road and Lot 377 Clinker Drive, Dunsborough
- Action management plan title: Offset Area Management Plan (EPBC 2018/8278) REV A
- Proponent /approval holder and ACN or ABN: Dunsborough Joint Venture, ABN xx xxxx xxx xxx
- Proposed / approved action: Residential Development
- Location of the action: Lot 9018 Martingale Road and Lot 377 Clinker Drive, Dunsborough, within the Shire of Busselton
- Date of preparation of the action management plan: June 2022
- Person accepting responsibility for the action management plan: Dunsborough Joint Venture

### Declaration of accuracy

I declare that to the best of my knowledge, all the information contained in, or accompanying this document is complete, current and correct. I am duly authorised to sign this declaration on behalf of the proponent/approval holder. I am aware that:

- giving false or misleading information is a serious offence under section 137. 1 of the Criminal Code Act 1995 (Cth)
- section 137.2 of the Criminal Code Act 1995 (Cth) makes it an offence for a person to produce a document to another person in compliance or purported compliance with a law of the Commonwealth where the person knows that the document is false or misleading;
- section 490 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading; and
- section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) (EPBC Regulations) where the person knows the information or document is false or misleading.

Signed: \_\_\_\_\_ 

Full name: Henry Dykstra

Organisation: Harley Dykstra ABN: 77 503 764 248

Date 31/07/2025

## Executive Summary

The Naturaliste Heights Development (the Project) is a proposed residential development within Lot 9020 Martingale Road, Dunsborough, Western Australia. The Commonwealth Minister has determined the Proposal for the Environment and Water as a “Controlled Action” due to its potential to have a significant residual impact on the following listed species:

- Western Ringtail Possum (*Pseudocheirus occidentalis*)

Offsets are required to achieve a conservation outcome that counterbalances any significant residual impact on a prescribed matter of national environmental significance (MNES) from proposed works. This Offset Area Management Plan (OAMP) has the purpose of providing guidance for the implementation of the offsets by using primary mechanisms that include:

- The dedication of a total offset area of 18.9 hectares (ha) of vegetation comprising of habitat suitable for both the Western Ringtail Possum and all three Black Cockatoo species
- Rehabilitation and revegetation management to improve the condition of low and medium-quality patches within the offset area to achieve high-quality condition and size within the offset area
- Implementation of a management plan for the integrity of existing remnant vegetation.

In accordance with the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act), the environmental outcomes to be achieved for the offset area through the implementation of this OAMP are:

- Improve and restore the habitat quality for listed threatened species habitat within the offset area
- Implement a vegetation management plan to ensure the integrity of existing remnant vegetation is maintained
- Facilitate an adaptive management plan for the offset area, including interim milestones and a monitoring program
- Compliance reports detailing progress and performance of the implemented management plan and the achievement towards, and maintenance of, the targeted environmental outcomes on an annual basis.

The outcomes will be achieved through a management plan that consists of:

- Maintaining habitat values
- Rehabilitation and restoration
- Pest and weed management
- Consistent monitoring and reporting to ensure that offset area is achieving and maintaining the completion criteria, including meeting the nominated interim milestone targets.

# Contents

<b>Declaration of Accuracy</b>	<b>2</b>
<b>Executive Summary</b>	<b>3</b>
<b>1 Introduction</b>	<b>6</b>
1.1 Background	6
1.2 Purpose	6
1.3 Legislative Requirements	6
<b>2 Existing Environment</b>	<b>10</b>
2.1 Topography, geology and soils	10
2.2 Hydrology	10
2.3 Vegetation and flora	11
<b>2.3.1 Vegetation</b>	<b>11</b>
<b>2.3.2 Flora</b>	<b>12</b>
2.4 Fauna and Habitat	12
<b>2.4.1 Western Ringtail Possum</b>	<b>12</b>
<b>2.4.2 Regional Ecological Linkages</b>	<b>12</b>
<b>2.4.3 Bushfire risk</b>	<b>13</b>
<b>3 Environmental Offset Strategy</b>	<b>18</b>
3.1 Mitigation Hierarchy	18
3.2 Offset Approach	19
<b>4 Environmental Outcomes</b>	<b>20</b>
<b>5 Management Action Overview</b>	<b>21</b>
5.1 Management Action 1 – Maintain Habitat Value	21
5.2 Management Action 2 – Rehabilitation	22
5.3 Additional Management Actions	23
<b>6 Management Actions</b>	<b>25</b>
6.1 Delineation and access	25
6.2 Weed and Pathogen management	25
6.3 Waste management	26
6.4 Fauna and pest management	26
6.5 Bushfire Management	27
6.6 Revegetation works	27
Water Management	28
<b>7 Monitoring and Evaluation</b>	<b>29</b>
7.1 Annual Compliance Reporting	29
7.2 Rehabilitation Monitoring	29
7.3 Interim milestones	31
<b>8 Performance and Completion Criteria</b>	<b>32</b>
8.1 Performance Criteria	32
Management Action 1	32
Management Action 2	32
Management Action 3	<b>Error! Bookmark not defined.</b>
8.2 Completion Criteria	33

8.3	Corrective Actions	33
<b>9</b>	<b>Risk Management</b>	<b>36</b>
<b>10</b>	<b>Timing and mechanisms for protection</b>	<b>39</b>
<b>11</b>	<b>Consistency with Commonwealth Offset Principles</b>	<b>40</b>
<b>12</b>	<b>References</b>	<b>42</b>
	<b>Appendix 1: Offset Calculations</b>	<b>44</b>
	<b>Appendix 2: Plant Guide for Revegetation</b>	<b>45</b>

# 1 Introduction

## 1.1 Background

Dunsborough Joint Venture (herein referred to as the proponent) proposes the development of residential lots (the Proposal) within Lot 9020 (previously 9019) Martingale Road, Dunsborough (herein referred to as the Proposal area) (refer to **Figure 1**). The original referral included Lot 377 Clinker Drive as part of the Proposal. This lot is not owned by the proponent and, as such, is no longer included in the Proposal area. The total extent of the Proposal area is 21.6 ha, as shown in **Figure 1**.

The Proposal will require the removal of 2.3 (ha) of vegetation (the disturbance footprint). In contrast, 18.9 ha of native vegetation will be retained and transferred into a conservation reserve (herein referred to as the offset area), as presented in **Figure 2**.

The Proposal was referred to the Department of the Environment and Energy (DotEE; now the Department of Climate Change, Energy, the Environment and Water [DCCEWW]) on October 10 2018. The following MNES were identified as being subject to significant residual impacts requiring offsets applied:

- **Western Ringtail Possum (*Pseudocheirus occidentalis*).**

## 1.2 Purpose

This Offset Area Management Plan (OAMP) has the purpose of providing guidance for the implementation of the offsets by using primary mechanisms that include:

- The dedication of a total offset area of 18.9 hectares (ha) of vegetation including habitat suitable for both the Western Ringtail Possum (WRP) and all three species of black cockatoo.
- Rehabilitation and revegetation management to improve the condition of areas within the offset area to achieve high-quality condition within the offset area, and
- Implementation of a management plan to maintain the integrity of existing remnant vegetation.

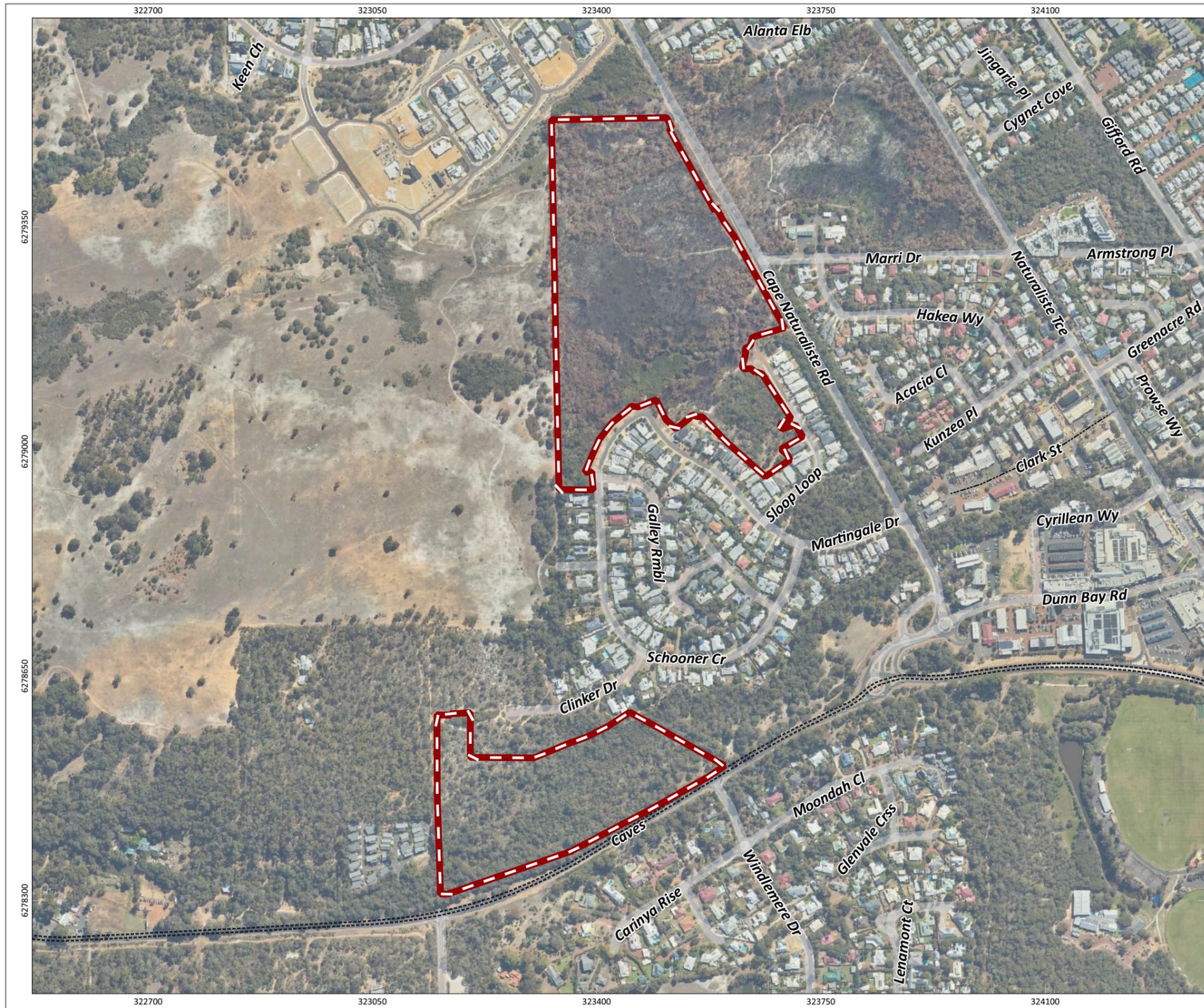
## 1.3 Legislative Requirements

The EPBC Act Environmental Offset Policy (EOP) ensures improved environmental outcomes by compensating for residual adverse impacts (SEWPaC 2012). It details specific and measurable outcomes to ensure efficient, effective, transparent, and reasonable use of offsets. The EOP requires proposed offsets to meet the following standards:

- Deliver an overall conservation outcome that improves or maintains the viability of the protected matter;
- Be built around direct offsets but may include other compensatory measures;
- Be in proportion to the level of statutory protection that applies to the protected matter;
- Be of a size and scale proportionate to the residual impacts on the protected matter;
- Effectively account for and manage the risks of the offset not succeeding;
- Be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs;
- Be efficient, effective, timely, transparent, scientifically robust and reasonable;
- Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced;
- Be informed by scientifically robust information; and
- Be conducted in a consistent and transparent manner (SEWPaC 2012).

The management objectives for the offset area, in accordance with the EPBC Act EOP, will:

- Deliver an overall conservation outcome that improves the viability of the Western Ringtail Possum
- Provide a direct offset that is proportionate to the level of Commonwealth protection that applies to the WRP
- Be of the size and scale proportionate to the direct residual impacts of the WRP (2.3 ha)
- Effectively account for and manage the risks of the offset not succeeding within the required management timeframe
- Provide a conservation gain additional to what is already required by a duty of care or to any environmental planning laws, schemes or programs
- Be efficient, effective, timely, transparent, scientifically robust and reasonable with appropriate governance arrangements in place to readily measure, monitor, audit or enforce the management offset area



**Figure 1: Proposal Area**

 	PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b>  Proposal Area	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>21/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	21/7/2025															
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COORDINATE REFERENCE SYSTEM GDA2020 / MGA zone 50	PROJECT NUMBER A25.024	VERSION 0	 <b>WESTERN ENVIRONMENTAL</b> Western Environmental Pty Ltd 08 6344 2310   enquiries@western.com.au Level 3/25 Prowse St, West Perth WA 6005 western.com.au																										
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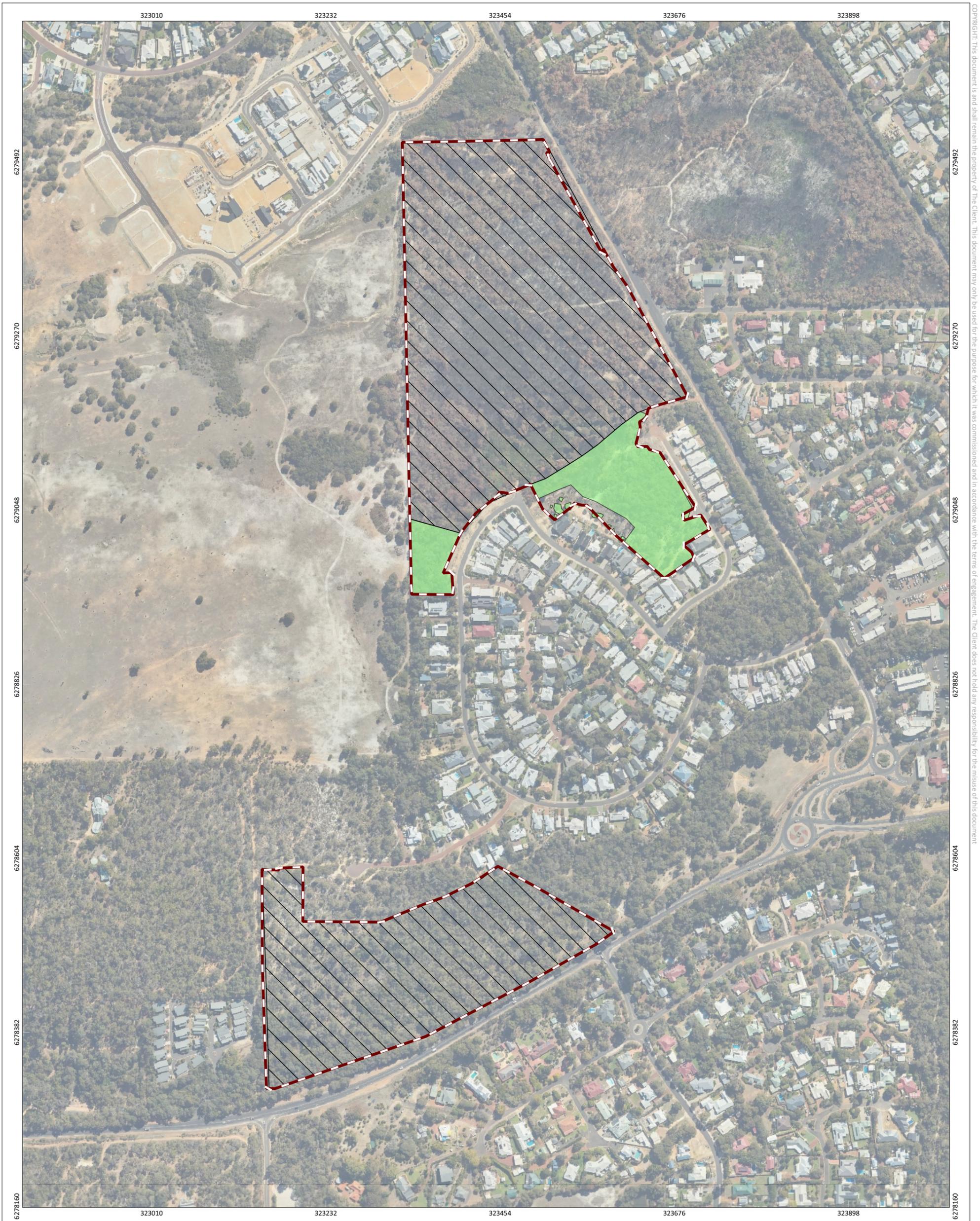


Figure 2: Disturbance Footprint and Conservation Area

	<b>PROJECT/REPORT NAME</b> Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b> Proposal Area Disturbance Footprint Conservation Offset Area	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>21/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	21/7/2025															
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**Figure 1: Proposal Area**

**Figure 2: Disturbance footprint and Offset area**

## 2 Existing Environment

### 2.1 Topography, geology and soils

Topography across the CA gently rises from 14m Australian Height Datum (AHD) at the eastern boundary to 22m AHD on the western boundary.

The northern area of the CA coincides with the Abba System (213ab) Poorly drained flats, on the southern Swan Coastal Plain. Grey deep sandy duplex and wet soil. Jarrah-marri-paperbark woodland.

### 2.2 Hydrology

A paluslope wetland occupies the central lower part of the northern extent of the subject site. This includes areas of free-standing water and seasonally waterlogged and inundated soils. The wetlands appear to be fed by groundwater seepage from the west. This wetland area will be protected within the offset area and subject to further protection through the implementation of an urban water management plan (UWMP).

The southern portion of the Proposal area contains the Dugalup Brook, a small, seasonal creek that runs parallel to Caves Road towards Dunsborough town centre. The Dugalup Brook will be protected within the reserve as a component of the Offset area.

Groundwater within the Proposal area varies in depth between seasons, as presented in **Table 1** and **Table 2**

**Table 1: Groundwater levels (2018)**

Monitoring Location	18-Jul	16-Aug	20-Sep	19-Oct	26-Nov
GW1	1.34	1.07	1.225	1.325	1.65
GW2	2.26	1.18	1.49	1.64	2.03
GW3	1.1	0.97	1.045	1.07	1.155
GW4	1.555	1.41	1.595	1.63	1.795
GW5	1.93	1.235	1.15	1.19	1.295
GW6	2.69	1.57	1.54	1.73	2.32
GW7	2.16	1.86	2.045	2.2	2.47

**Table 2: Groundwater levels (2022)**

Monitoring Location	12-May	8-Jun	9-Jul	3-Aug	1-Sep
GW1	2.71	2.36	1.77	1.4	1.22
GW2	3.07	3.12	2.63	2.09	1.74
GW3	2.72	2.41	1.56	1.1	0.98
GW4	2.6	2.54	1.65	1.55	1.54
GW5	2.71	2.58	2.18	1.72	1.34
GW6	4.52	4.52	4.53	2.95	2.23
GW7	2.45	2.45	2.45	2.13	2.19

## 2.3 Vegetation and flora

### 2.3.1 Vegetation

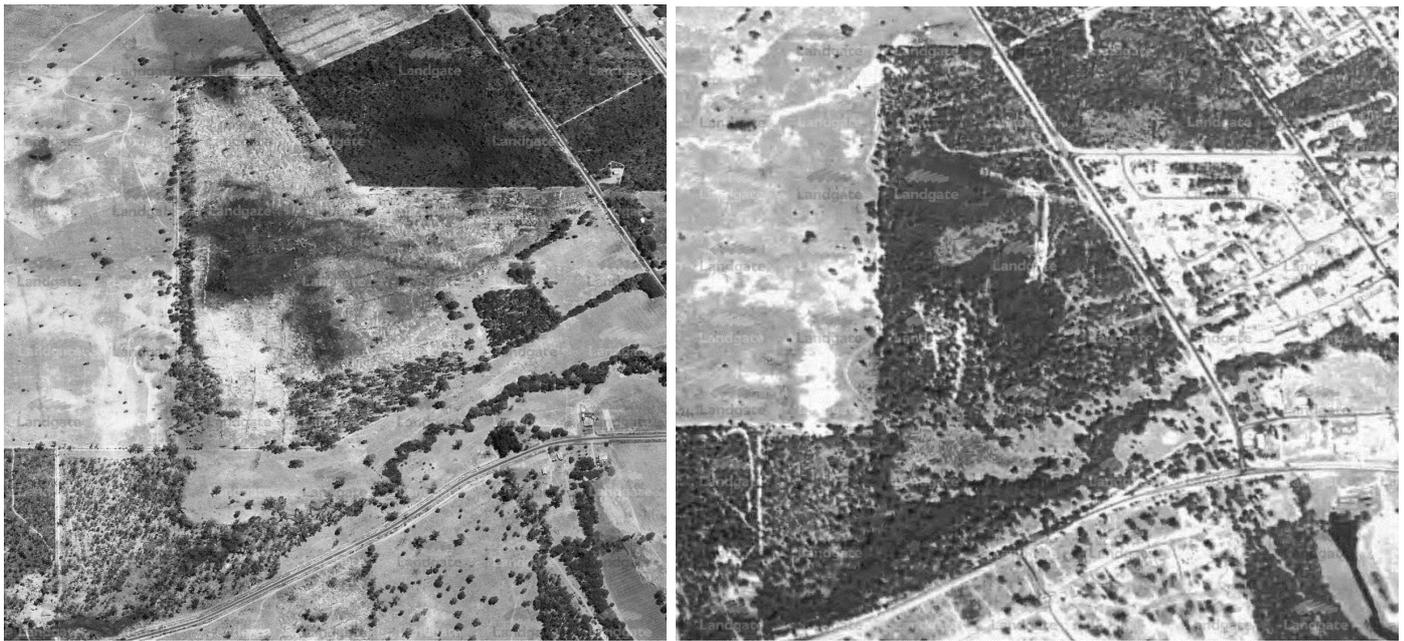
A total of nine native vegetation units (VUs) were defined and mapped in the Proposal area (Accendo, 2018), VU's are summarised in **Table 3** and displayed in **Figure 3**.

**Table 3: Vegetation types within the Proposal area**

Vegetation Type	Description	Area (ha)
VU1: <i>Corymbia calophylla</i> – <i>Banksia grandis</i> woodland:	Woodland of <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> and <i>Banksia grandis</i> over open shrubland of <i>Xanthorrhoea preissii</i> and <i>Xylomelum occidentale</i> over rushes and herbs including <i>Desmodcladus flexuosus</i> and <i>Cyathochaeta avenacea</i> .	5.33
VU2: <i>Corymbia calophylla</i> woodland	Woodland of <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> over <i>Trymalium odoratissimum</i> subsp. <i>odoratissimum</i> and <i>anthorrhoea preissii</i> over <i>Tetraria sp. Jarrah Forest</i> and <i>Hibbertia hypericoides</i> on brown sandy loams.	5.50
VU3: <i>Stirlingia latifolia</i> – <i>Nuytsia floribunda</i> shrubland	Open low shrubland of <i>Stirlingia latifolia</i> and <i>Jacksonia furcellata</i> with emergent <i>Nuytsia floribunda</i> and <i>Agonis flexuosa</i> over rushes and herbs including <i>ypolaena exsulca</i> on grey sands.	0.67
VU4: <i>Agonis flexuosa</i> - <i>Banksia attenuata</i> low woodland	Low open forest of <i>Agonis flexuosa</i> , <i>Banksia attenuata</i> and <i>Corymbia calophylla</i> over tall open shrubland of <i>Taxandria linearifolia</i> and <i>Acacia saligna</i> over low open shrubland of <i>Adenanthos meisneri</i> , <i>Pteridium esculentum</i> and <i>Macrozamia riedlei</i> on brown loamy sands.	0.92
VU5: <i>Agonis flexuosa</i> riparian woodland	Woodland of <i>Agonis flexuosa</i> , <i>Corymbia calophylla</i> and <i>Eucalyptus patens</i> over an open shrubland of <i>Trymalium odoratissimum</i> subsp. <i>trifidum</i> , <i>Acacia divergens</i> and <i>Callistachys lanceolata</i> over sedgeland of <i>Lepidosperma tetraquetrum</i> on damp brown loams.	0.84
VU6: Paluslope wetlands	Low open forest of <i>Melaleuca preissiana</i> and <i>Banksia littoralis</i> over tall sparse shrubland of <i>Taxandria linearifolia</i> and <i>Astartea scoparia</i> over sedgeland of <i>Cyathochaeta teretifolia</i> and/or <i>Hypolaena grandiuscula</i> in damp brown silty loams.	3.01
VU7: Dunsborough Forest Swamp	Open forest of <i>Eucalyptus patens</i> and <i>Melaleuca raphiophylla</i> over tall shrubland of <i>Spyridium globulosum</i> , <i>Exocarpos odoratus</i> and <i>Xanthorrhoea preissii</i> over sedgeland of <i>Baumea juncea</i> in brown loamy sands.	2.84
VU8: <i>Melaleuca preissiana</i> - <i>*Typha orientalis</i> rushland	Closed rushland of <i>*Typha orientalis</i> with emergent <i>Taxandria linearifolia</i> in deeper freestanding water.	1.30
VU9: <i>Melaleuca preissiana</i> – <i>Cyathochaeta teretifolia</i> open forest	Woodland of <i>Melaleuca preissiana</i> and <i>Corymbia calophylla</i> over sparse <i>Agonis flexuosa</i> and <i>Taxandria linearifolia</i> over open sedgeland of <i>Cyathochaeta teretifolia</i> on yellow clayey sands.	1.11
VU10: Bassendean Orange Sands	No Description provided	0.08
<b>Total</b>		<b>21.6</b>

Vegetation condition within the wider Proposal area was assessed by Accendo (2018). The vegetation condition within the majority of the Proposal area was assessed to be in a 'Very Good' to 'Excellent' state, with some areas assessed as being either 'Degraded' or 'Completely Degraded'. Vegetation condition within the Proposal area is presented in **Figure 4**.

Accendo (2018) describes the *Melaleuca preissiana* – *Cyathochaeta teretifolia* open forest vegetation type occurring to the north of the proposal area as having lost most of its structure, due to possible historic clearing. A review of historic aerial imagery indicates that much of the Proposal area had been cleared sometime prior to 1970. It is assumed that natural recruitment occurred between 1970 and 1996 re-establishing vegetation within the Proposal area, as shown in **Plate 1**.



**Plate 1: Proposal area in 1970 (L) and 1996 (R)**

### 2.3.2 Flora

A total of 158 native and 26 non-native (introduced and cultivated) taxa were recorded within the wider Proposal area, representing 52 families and 128 genera. The dominant families containing mostly native taxa were *Myrtaceae* (16 native taxa), *Fabaceae* (21 native taxa, 3 non-native taxa), *Orchidaceae* (13 native taxa) and *Cyperaceae* (13 native taxa) (Accendo, 2018).

No Threatened or Priority flora species under either the EPBC Act or BC Act were recorded within the survey area, and no threatened or Priority Ecological Communities were identified within the development area.

## 2.4 Fauna and Habitat

For the purpose of this OAMP, only species identified as relevant to the assessment of the Proposal under the EPBC Act have been specifically considered.

### 2.4.1 Western Ringtail Possum

Within the Proposal area, WRPs were recorded in all habitat types except for the core palusplain wetland area associated with the *Melaleuca preissiana* – *Typha oreintalis* vegetation type (Accendo, 2018). Within the Proposal area, there is up to 20.9 ha of critical habitat for the species.

The highest densities of WRP within the Southern Area align with Dugalup Brook, which can be attributed to improved habitat quality (based on the absence of anthropogenic disturbances and availability of preferential habitat species). Retaining this vegetation will maintain a potential east-west ecological corridor, connecting to the north-south corridor along Cape Naturaliste Road.

The offset area contains the following key WRP values (**Figure 5**):

- 18.6 ha of 'Medium' habitat for the species
- Up to 35 individuals observed in one night (noting populations fluctuate, due to increases in transient individuals during breeding season) (Western Environmental, 2023), in addition to 59 direct scat observations
- 30 nest locations recorded during latest survey (Western Environmental, 2023), including a large banksia with three dreys recorded.

### 2.4.2 Regional Ecological Linkages

Regional Ecological Linkages are a network of protected Regionally Significant Natural Areas which act as corridors to maintain habitat connectivity for flora and fauna species. Several of these linkages exist within

the City of Busselton, as mapped by the South West Regional Ecological Linkages Project (Molloy et al., 2009). Two of these fall across the Offset area (Link ID: 110 and Link ID: 65; **Figure 6**).

The retention, enhancement and conservation of vegetation within the offset area will maintain and protect both of these ecological linkages. In addition, at least one other inferred corridor runs east to west through the offset area (**Figure 6**).

#### **2.4.3 Bushfire risk**

The majority of the Proposal area and the entirety of the offset area are designated as bushfire-prone on the WA map of bushfire-prone areas (DFES 2019).

Bushfire Prone Planning (BPP) assessed the bushfire risk through an on-ground assessment of classified vegetation and exclusions within 150 m of proposed development in accordance with *AS 3959-2009 Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2009). The bushfire assessment identified areas of Class A forest, Class D scrub and Class G grassland within 150 m of the Proposal, resulting in a moderate to extreme bushfire hazard.

Amendments to the disturbance footprint have been implemented since the completion of the BMP to remove the requirement for asset protection zones within the offset area. Appropriate separation distances have been achieved through alterations to the internal road reserve and building envelope setbacks within the most impacted lots.

Concerning the CA, bushfires present a significant risk to maintaining and enhancing the present environmental values. The CA has uncontrolled access, and evidence of campfires, littering and small-scale vegetation removal have been observed during recent surveys. This uncontrolled access presents a significant risk for potential accidental and deliberate fires. Establishing access control and reviewing fire breaks and bushfire management will assist in managing future bushfire risk.

#### **2.4.4 2025 Bushfire Event**

The Proposal area, including the northern section of the Conservation area was impacted by a significant bushfire event in February 2025. Photographic evidence immediately post fire and following a site visit undertaken in June was provided to a Bushfire consultant from Western Environmental to review and advise on the scale and intensity of the event.

The advice provided described that the fire appeared to have been severe, with canopy scorch evident throughout the area and large areas of bare earth where all available fuel had been consumed. It was noted from the site visit in June that regeneration is occurring this is limited to bracken ferns and herbs, typical of early seral communities. It was noted during the site visit that there was a distinct lack of peppermint regeneration, particularly in the centre portions of the affect area, while some regeneration was noted on the edges where the fire would not have been as intense. There is a likelihood that in some areas the fire was hot enough to destroy the natural seed bank in the soil however, advice from rehabilitation experts suggest it is too early to tell and that it will be more evident following the winter period into spring. The recommended focus for the next 12 months is that efforts should be placed on weed management and control, especially the Arum Lily (*Zantedeschia aethiopica*) infestation within the wetland area, that would provided significant long-term habitat enhancement within the Conservation area.

The potential impact to the seed bank has been considered in the preparation of the rehabilitation criteria and risk assessment, outlined in Sections 6-8.

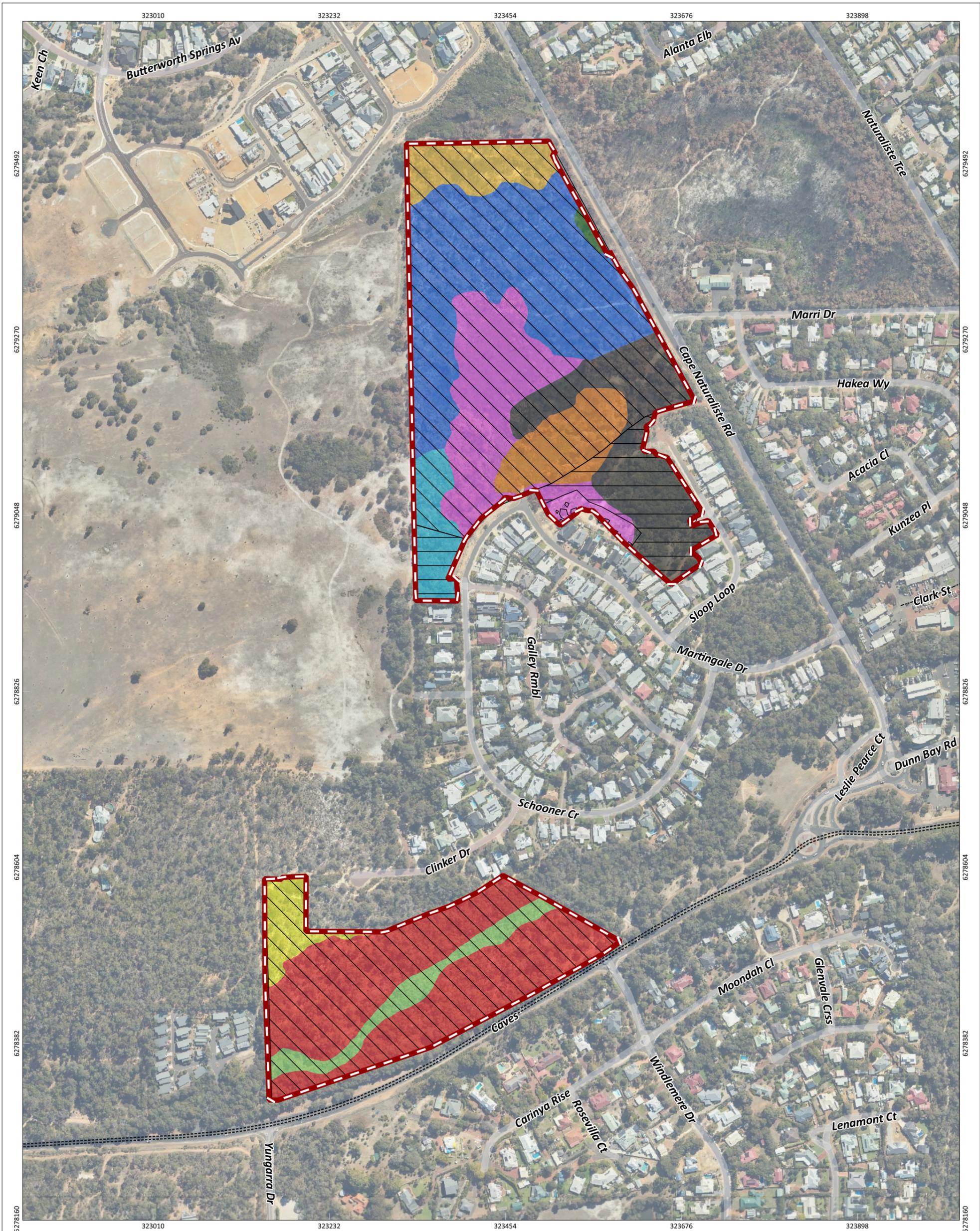


Figure 3: Vegetation Types

	PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b> Proposal Area Disturbance Footprint Conservation Offset Area Agnois flexuosa - Banksia attenuata low woodland Agnois flexuosa riparian woodland Bassendean Orange Sands Corymbia calophylla - Banksia grandis woodland Corymbia calophylla woodland Dunsborough Swamp Forest Melaleuca preissiana - Cyathochaeta teretifolia woodland Melaleuca preissiana - Typhya orientalis Paluslope Wetland Stirlingia latifolia - Nuytsia floribunda shrubland	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>21/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	21/7/2025															
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Figure 4: Vegetation Condition

	PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b> Proposal Area Disturbance Footprint Conservation Offset Area Completely degraded Degraded Very Good Excellent	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>22/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	22/7/2025															
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Figure 5: Western Ringtail Possum Values Within The Conservation Area

	PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b> Proposal Area Conservation Offset Area Western Ringtail Possum Habitat	Western Ringtail Possum - Nest or Drey Western Ringtail Possum - Spotlight Western Ringtail Possum - Scat	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>22/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	22/7/2025																<p style="font-size: small;">Western Environmental Pty Ltd 08 6244 2310   enquiries@westenv.com.au Level 3/25 Prowse St, West Perth WA 6005 westenv.com.au</p>
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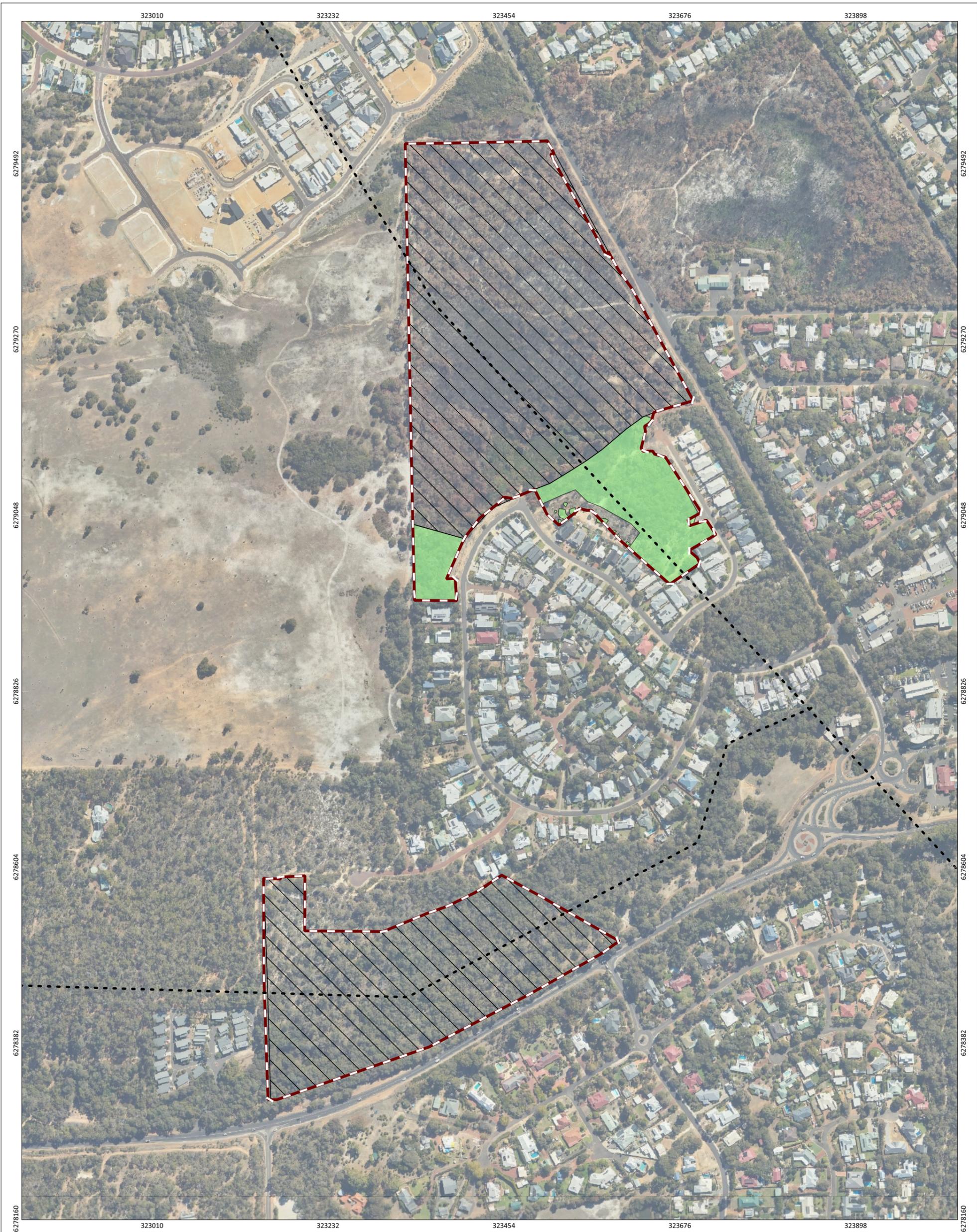


Figure 6: Ecological Linkages

	PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough		<b>Legend</b> Proposal Area Disturbance Footprint Conservation Offset Area South West Regional Ecological Linkages Axis Lines	<table border="1"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>22/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	22/7/2025															
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### 3 Environmental Offset Strategy

Offsets are required to achieve a conservation outcome that counterbalances any significant residual impact on a matter of national environmental significance (MNES) due to the Proposal. These offsets must provide environmental values like the ones being lost, minimise the time-lap between the impact and delivery of the offset, and provide additional protection to the environmental values at risk or management actions to improve environmental values.

The provision of direct offsets is proposed based on the outcomes of the significance assessment and the extent of the significant residual impacts on MNES. Based on this, one protected matter has been identified that is likely to be subject to significant impacts when assessed against the significant impact guidelines 1.1 (DoE 2013). This protected Matter is the Western Ringtail Possum (*Pseudocheirus occidentalis*).

The Proposal will reduce the extent of the habitat for the WRP by removing 2.3 ha of vegetation. The removal of this habitat fauna habitat is unavoidable, and therefore, to mitigate the loss, direct offsets are proposed in accordance with the Commonwealth's EPBC Act Environmental Offsets Policy and calculated as per the EPBC Act Offset Assessment Guide.

The offset area to which this OAMP relates was determined to be suitable for implementing a targeted land management approach, which will result in preserving and restoring habitat for the WRP. The suitability of the offset area was determined based on the results of ecological investigations undertaken at the Proposal area.

This OAMP aims to provide high-level guidance for implementing the offsets. The primary mechanisms include:

- The dedication of an offset area of 18.9 ha of vegetation comprising 18.6 ha of habitat suitable for the WRP
- Rehabilitation and revegetation management to improve the condition of low and medium-quality patches within the offset area to achieve high-quality condition and size within the offset area
- Implementation of a management plan for the following categories to ensure the integrity of existing remnant vegetation is improved or maintained:
  - Maintaining habitat values
  - Rehabilitation and restoration
  - Pest and weed management
- Consistent monitoring and reporting to ensure that the offset area is achieving and maintaining the completion criteria, including meeting the nominated interim milestone targets.

Implementing these mechanisms is intended to achieve a continuous conservation area of high-quality habitat for threatened fauna species. In addition, the OAMP provides an opportunity to improve knowledge in restoring and managing habitat for the WRP within the Dunsborough region.

#### 3.1 Mitigation Hierarchy

Before the consideration of offsets and in consultation with DCCEEW, the application of the mitigation hierarchy has resulted in a significant reduction in potential environmental impacts, including:

- Clearing of habitat suitable for the WRP reduced from 9.3 ha to 2.3 ha, representing a 75% reduction
- Reduced clearing of 'Very High' quality foraging habitat for Carnaby's Cockatoo and Forest red-tailed Black Cockatoo 6.2 ha to 0.47 ha, representing a 92% reduction
- Removal of trees with suitable hollows for Black Cockatoo breeding reduced from four to nil, and
- Increase in the proposed conservation area from 13.6 ha to 18.9, representing a 39% increase in area.

Through the application of the mitigation hierarchy, approximately 18.9 ha of habitat for WRP and Black Cockatoos will be retained within the proposed Conservation Area. Retention of these conservation areas has been proposed as part of the Proponents' avoidance measures as per the mitigation hierarchy above.

To ensure the protection and security of the Conservation Areas in perpetuity, the Proponent will place a Conservation Covenant over the Conservation Area. The preferred conservation mechanism is a conservation

covenant pursuant to Section 305 of the EPBC Act. However, the Proponent can consider alternative mechanisms on the recommendation of the DCCEE, if necessary.

Implementing the OAMP and applying a conservation covenant go beyond avoidance and mitigation. Instead, they are proposed to account for residual impacts resulting from the Proposal and are considered an integral component of the offsets package.

### 3.2 Offset Approach

The Proposal impacts 2.3 ha of habitat for the WRP, which is an MNES recognised as having conservation significance (listed as Critically Endangered). Therefore, any onsite and/or acquisition component of the offset strategy must be of sufficient size and quality to offset the impacts on these species.

The proposed strategy to offset significant residual impacts resulting from the Proposal includes:

1. Improvement and protection of 18.9 ha within dedicated CA, within the Proposal area (**Section 6**).
2. Transfer of funding to the Local Government or local Landcare group for the purposes of restoring or enhancing habitat for the impacted MNES within the Dunsborough local region

The anticipated offset requirements have been determined using the DoEE (2012) Offset Assessment Guide and associated calculator, the outcomes of which are provided in **Appendix 1**. Where relevant, these have been provided as Appendices to this report. It is noted that measures 1 and 2 above are anticipated to offset 100% of the significant residual impacts directly.

As there will be no direct impacts to suitable breeding trees for Black Cockatoos, the only residual impact that is considered for offsetting is the 0.47 ha of 'High' quality foraging habitat. Noting the higher offset ratio for WRP and the shared habitat types within the Proposal area, the proposed offsets for WRP more than accounts for the anticipated residual impact to Black Cockatoos.

## 4 Environmental Outcomes

The overarching environmental outcome for the proposed offset area is to achieve the conservation goal of securing and enhancing habitat that supports:

- Western Ringtail Possum (*Pseudocheirus occidentalis*);

In accordance with the EPBC Act, the environmental outcomes to be achieved for the offset area through the implementation of this OAMP are:

- Improve and restore habitat across the offset site through the implementation of this plan and the WRP Management Plan (WRMP)
- Implement this OAMP to ensure the integrity of existing remnant vegetation is maintained
- Facilitate an adaptive management plan for the offset area, including interim milestones and a monitoring program
- Compliance reports detailing the progress and performance of the implemented management plan and the achievement towards, and maintenance of the targeted environmental outcomes annually.

To be considered successful, the offset must meet the following criteria to demonstrate a conservation outcome based on suitable habitat quality assessments:

1. After 20 years, the offset area habitat quality score must be at least 1 point greater than the impact area habitat quality score (prior to the impact); and
2. After 20 years, the offset area habitat quality score must have achieved an overall habitat quality gain of at least 1 point.

Therefore, to successfully restore the habitat in the proposed offset area, the interim milestones and management plan must result in a habitat quality score of 8 out of 10 after 20 years for habitat supporting the WRP. This criterion aligns with the EPBC Act's Offset Assessment Guide (DCCEEW 2012). Additionally, for the offset to be successful, any identified Weeds of National Significance (WoNS) within the offset area must present densities lower than 1% and locally significant weeds must be reduced by over 90% from the baseline monitoring assessment. Additionally, pest animals must not be detected within the offset area for a period of two or more years.

## 5 Management Overview

This section provides an overview of the proposed management actions required to meet the identified environmental outcomes of the offset area. Management actions are designed to help reach environmental outcomes by having accountable processes to align with the interim milestones and management plan, minimise the risk associated with key threatening processes, and maintain and improve habitat quality within the offset area. Management actions are developed to achieve the environmental outcomes listed in **Section 4**, primarily to improve the overall habitat quality and condition of the WRP. However, the management actions are expected to enhance the condition and quality of a wide range of biodiversity, including other listed threatened species.

The management actions summarised below and defined in more detail in **Section 6** are considered suitable given the species' conservation status, the offset area, and the delivery of effective, timely, and transparent measurable or monitorable actions. Additionally, the application of the mitigation hierarchy and the proposed management actions align with the guidance outlined in the '*Conservation Advice for Pseudocheirus occidentalis (western ringtail possum) (Conservation Advice)*' (TSSC, 2018).

The Conservation Advice, published in 2013, for the species identified regional and local priority actions. While not identified in the 2017 version, these regional and local priority actions are considered relevant to the enhancement and protection of the species' habitat as it relates to the offset area. The OAMP and WRPMP ensure alignment with the following identified actions:

### Regional

- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate and/or secure
- Conserve existing populations within public lands managed by the Western Australian Department of Environment and Conservation and private conservation reserves.
- Re-create, retain and improve habitat characteristics, including corridors
- Develop and implement suitable hygiene protocols to protect known sites from dieback caused by *Phytophthora cinnamomi*, and insect attacks.
- Engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.

### Local

- Retain and plant peppermint (*Agonis flexuosa*) trees.
- Control access routes to suitably constrain public access to known sites on public land.
- Minimise adverse impacts from land use at known sites. Minimise the impact of land developments through in-situ conservation.
- Protect populations of the listed species through the development of conservation agreements and/or covenants.
- Suitably control and manage access on private land and other land tenure
- Conserve remnant bushland for the WRP by placing a covenant or voluntary management agreement on properties, and by fencing, controlling feral species and removing weeds.
- Restrain domestic animals in residential areas. Where fencing is required, ensure that it is at least 210 cm to reduce the risk of dog attack.

### 5.1 Management Action 1 – Maintain Habitat Value

The maintenance of existing habitat value within the offset area is one of the priority management actions proposed to align with the Conservation Advice. Maintaining habitat value is intended to protect the vegetation supporting the significant species, by preventing further losses in extent and integrity. The offset area will be managed to avoid risks and threats that may reduce the offset area's size, condition, and ecological function in the future.

Additionally, the location of the offset area allows for the maintenance of movement corridors through the adjacent Marri Reserve and surrounding supporting habitat. The following actions will be implemented to maintain the existing habitat value:

- Implementation of all management measures outlined within this OAMP and the WRPMP.

- Active maintenance or improvement of existing hydrology schemes to maintain ecosystem functions in offset area, primarily through the successful implementation of the UWMP
- Control of access through the installation of, barriers, gates, fencing, or signage at strategic locations that outline the offset area appropriately and its value.
- Engagement with the adjoining landowner on implementing vegetated buffers around the offset area to protect the area from threats such as erosion and weed invasion from edge effects.
- Installation of supporting habitat enhancement infrastructure including waterers for both WRP and both species of Black Cockatoo. Appropriate installation of artificial habitat will be undertaken following engagement with the Department of Biodiversity, Conservation and Attractions (DBCA) to ensure the appropriateness and effectiveness.
- Fencing that prohibits dog entry will be erected along with signs advising that dogs are not permitted within the fenced areas of Conservation area. Walk tracks will still be maintained for local residents to utilise with their pets.
- Immediate implementation of weed control efforts, initially focused in areas impacted by bushfire and the arum lily infestation observed within the wetland.

## 5.2 Management Action 2 – Rehabilitation

Rehabilitation and regeneration within the offset area are key actions to improve the existing habitat for the WRP and support the local population within the region. The rehabilitation and regeneration process involves reinstating areas considered to be in a 'degraded' condition or areas that require revegetation following any additional management action, for instance, weed removal or fire. **Figure 7** displays potential areas for revegetation within the CA. Revegetation areas will be ground-truthed by relevant experts from either Local Government, NGO's or DBCA. Within the CA, no less than 8 ha will be directly rehabilitated, including areas of revegetation and post-fire restoration measures.

Restoration through both assisted natural regeneration and infill planting programs is the preferred method, locations of where each method will be applied will be subject to discussion with relevant subject matter experts, including the local Department of Biodiversity, Conservation and Attractions (DBCA) office.

Additional replanting will be implemented to facilitate recovery when natural regeneration is not successful at restoration. Review of seasonal rainfall and natural regeneration success will also be considered in developing the final revegetation plan that will be submitted to DCCEEW for approval. Restoration actions will be based on the best available knowledge and scientific research to maximise positive biodiversity outcomes (DAWE 2021). Management measures for rehabilitation and regeneration include the following:

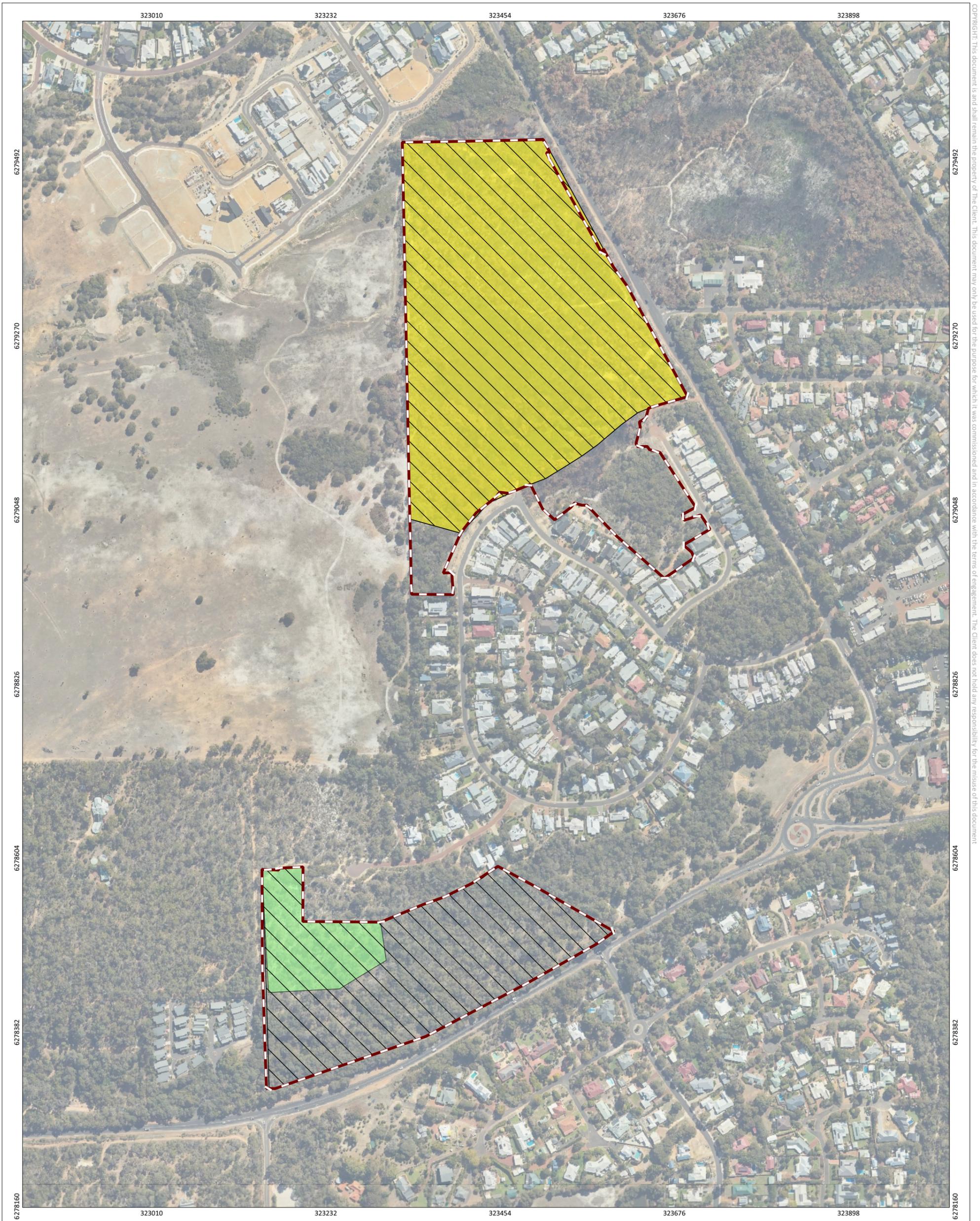
- Baseline mapping to identify rehabilitation and regeneration areas and the development of an in-depth restoration plan to be completed within the first 12 months of commencement.
- Engagement and consultation with local subject matter experts including DCBA and Southwest NRM will be undertaken to inform restoration plan.
- Where regeneration occurs within the offset area, measures that will support the regeneration to maturity (e.g. provide tree guards to minimise grazing or trampling damage risk) will be provided.
- All rehabilitation activities are to be conducted by a suitably qualified bush regeneration contractor, and relevant advice from local authorities will be taken into consideration before undertaking restoration works.
- Where natural regeneration is not successful, infill planting will be implemented.
- Only local native species from the Conservation area will be used for infill planting.
- Seed collections will follow appropriate national guidelines and protocols with long-term storage of germplasm in an appropriate State facility. Locally collected seeds, where available, will be used to revegetate native plant species.

- Stags, logs and mature and old-growth trees with hollows will be maintained within the offset area to provide important habitat for fauna. Where possible logs and potential habitat forming material will be salvaged from clearing works and placed within the offset area
- Any planting that occurs at the offset area will have a prior commitment plan to maintain care of the newly planted vegetation, including the watering, mulching, weeding and use or removal of tree guards.
- Evidence of rehabilitation success and survival rate will be reported annually. All rehabilitation is to commence within two years of Proposal commencement. Additional regeneration areas that require infill replanting will be identified and actions for regeneration will be described, in the third year and following annual compliance reports.
- Habitat quality assessments will be conducted annually for the first three years and then at year 5, 10, 15, and 20 to determine if the habitat quality score has been maintained and improved by 1 point or more by year 20 for the offset area. Habitat quality monitoring is to be reported in the annual report adjacent to the years of assessment.

### **5.3 Additional Management Actions**

Additional site-specific management actions to ensure success in achieving habitat improvement and maintenance are outlined below:

- Delineation and access
- Weed and Pathogen management
- Waste management
- Fauna and pest management
- Bushfire management
- Revegetation works
- Water management



**Figure 7: Indicative Rehabilitation Areas**

	<p>PROJECT/REPORT NAME Offset Area Management Plan Lot 9020 Martingale Road, Dunsborough</p>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li> Proposal Area</li> <li> Conservation Offset Area</li> <li> Potential Reveg Area</li> <li> Post-Fire Restoration Area</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>Description</th> <th>Drawn</th> <th>Approved</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Original issue</td> <td>MD</td> <td>BH</td> <td>30/7/2025</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No	Description	Drawn	Approved	Date	A	Original issue	MD	BH	30/7/2025																<p><b>WESTERN ENVIRONMENTAL</b></p> <p style="font-size: small;">Western Environmental Pty Ltd 08 6244 2310   enquiries@westenv.com.au Level 3/25 Prowse St, West Perth WA 6005 westenv.com.au</p>
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## 6 Management Actions

### 6.1 Delineation and access

Delineation of the CA is important during the construction phase and after construction. If the CA is not effectively delineated, degrading processes such as unapproved clearing and unmitigated vehicle and pedestrian access may become more prevalent, which may increase the risk of weed and phytophthora proliferation within the CA. Delineation actions are outlined in **Table 4**.

It is also important to note that the CA serves as a valuable habitat retention for the local WRP community, and at present, no formalised access to the local community exists. To ensure that the CA's environmental values are not harmed as a result of the Proposal, no formalised tracks to encourage human movements will be established with the CA post-development.

Existing tracks will remain, providing sufficient access to undertake ongoing management actions and allow authorised access to the CA.

**Table 4: Delineation and access measures**

Action	Timing	Responsibility
<p>Install appropriate temporary fencing adjacent to the designated habitat retention areas to limit/ prevent unauthorised access to the conservation area and reduce the likelihood of WRP individuals entering active staged construction areas.</p> <p>Fencing should be constructed so that 1 m is underground and above ground height is 2 m, with the final 500 mm to be solid sheet steel. This type of fencing will only be implemented during construction. Long-term fencing to be installed will comprise of semi-passable ring lock fence supported by pine posts.</p> <p>Biologic (2022) confirmed that WRPs utilise trees and fencelines, and movement of WRPs will not be inhibited by proposed permanent ring-lock fencelines.</p>	<p>Prior to construction commencing in the development stages abutting the CA. Removal following completion of staged construction.</p>	<p>Project Manager.</p>
<p>Install signage on pedestrian access tracks detailing the CA conservation objectives and acceptable uses.</p>	<p>During construction.</p>	<p>Project Manager.</p>

### 6.2 Weed and Pathogen management

Appropriate management measures will be implemented prior to, during, and after construction works to minimise potential spread of weed and dieback infestations to vegetation within the CA.

Weed management will be implemented using a variety of techniques, including:

- Spot spraying – where hand-spraying apparatus is applied directly to target plant.
- Hand weeding – physical removal of the weed.

**Table 5** outlines the weed management actions.

**Table 5: Weed and pathogen management measures**

Action	Timing	Responsibility
<p>Prior to entering the CA, all vehicles, machinery and equipment are to be free of mud and soil</p>	<p>At all times</p>	<p>All personnel</p>
<p>If necessary, based on monitoring, develop a weed control program and appoint an experienced contractor to manage weeds within the CA.</p>	<p>During construction and post-construction until formal handover of the CA to the CoB</p>	<p>Environmental Consultant</p>
<p>All plants and other materials used in any revegetation are to be free of soil that may contain dieback or weeds (i.e. plants supplied by a NIASA accredited nursery)</p>	<p>During revegetation</p>	<p>Revegetation contractor</p>

Action	Timing	Responsibility
Boot washdown stations will be installed at all formalised pedestrian access points into the CA.	In conjunction with the formalisation of pedestrian access tracks through the CA.	Project Manager
Stormwater management will be designed and constructed to manage drainage into the CA and ensure water quality within the wetland retained in the CA is not reduced.	Detailed design and construction	Project Manager.
Comprehensive weed management will be designed and implemented in consultation with the City of Busselton and as part of a holistic bushfire recovery plan for the CA	Prior to construction and through to hand over to CoB	Project Manager and Environmental Consultant

### 6.3 Waste management

Increased use of the CA due to the establishment of adjacent residential development is likely to result in increased unregulated waste disposal within the CA. Unregulated waste can have adverse impacts on flora and fauna within the CA, as well as amenity to the public. Waste management measures are presented below in **Table 6**.

**Table 6: Waste management measures**

Action	Timing	Responsibility
Install self-closing, public waste bins at convenient locations such as formalised pedestrian access tracks	Within 6 months of formalising public access paths.	Project Manager
Increase community awareness regarding waste management and environmental sustainability through installation of signage demonstrating clear waste disposal practices.	Within 6 months of formalising public access paths.	Project Manager

### 6.4 Fauna and pest management

Feral fauna species, predominately rabbits and foxes, have the potential to affect vegetation and native fauna present within the CA, through overgrazing, predation, burrowing, and competition for food and shelter.

Given that this Proposal involves the establishment of residential development adjacent to the CA, it is anticipated that domestic cats and dogs will also likely pose a threat to native fauna within the CA. Community education will therefore be required, in addition to appropriate feral animal controls where required, to protect and enhance the retained vegetation (**Table 7**).

**Table 7: Fauna and pest management measures**

Action	Timing	Responsibility
Engage a suitably qualified subcontractor to undertake pest fauna control / removal (including feral bee removal) as per the contingency actions stipulated within <b>Table 14</b> based on monitoring results ( <b>Table 11</b> ).	On advice of qualified subcontractor until handover.	Environmental Consultant / Project Manager.
Provide community education signage around throughout the CA detailing the potential risk that domestic cats and dogs may pose to native fauna within the CA.	To be installed during construction.	Project Manager.
Implementation of the WRPMP.	Prior to and during construction as per Table 3 of WRPMP.	Project Manager / Construction Contractor.
Installation of artificial watering sources for WRP and Black Cockatoos	To be installed during construction	Project Manager / Construction Contractor.
Regular maintenance of natural Black Cockatoo nest hollows, if required	During operation	Project Manager

## 6.5 Bushfire Management

Given the moderate to extreme bushfire hazard associated with the CA, bushfire risk will be closely managed in regular consultation with the CoB, and at the CoB's discretion. Management actions will be considered on a case-by-case basis concerning community expectations and with the safety of the community as a priority.

Potential management actions that may be implemented to reduce bushfire risk within the CA include:

- Regular monitoring of fire fuel loads.
- Mechanical reduction of fire fuel loads at the periphery of the CA.
- Maintenance of any existing fire access tracks through the CA.
- Educational signage highlighting the threat that fire poses to the environment and community.

## 6.6 Revegetation works

The CA covers an area of 18.9 ha. The CA intersects with existing access tracks and is subject to unrestricted access, illegal dumping and other degrading processes. As a result, a significant opportunity exists to enhance the environmental values of the CA through revegetation.

While restoration works focused on supporting natural recruitment and regrowth is the primary focus of the initial 12 months. Based on pre-fire vegetation mapping, revegetation and rehabilitation is proposed to be undertaken in the south of the Proposal area, and rehabilitation in the north of the Proposal area, across a total of 8 ha of restoration, as shown in **Figure 7**. A minimum of 8 ha will be restored within the CA, with areas to be finalised in discussion with the environment team from the City of Busselton and NGO groups who will undertake the required works. As a result of the recent bushfire event, priority will be given to revegetation that best support the recovery of the CA and ensure enhanced values are established post recovery.

All revegetation and rehabilitation works will be undertaken in accordance with best practice guidelines for revegetation guidelines and consultation with DBCA and the CoB. The following describes the proposed methodology of the revegetation works:

- Target linking existing remnant native upper-storey species with seedling plantings.
- Include infill planting around native remnant vegetation patches.
- Encourage natural regeneration through weed control in existing native vegetation patches.
- Include direct seeding in large bare areas.

Revegetation will be undertaken to ensure the completion criteria within **Table 8** and **Table 12** and **Section 8.2** are achieved before the formal handover of the CA to the CoB. If completion criteria are not achieved prior to the formal handover, then the associated contingency measures within **Table 14** will be implemented. Additional revegetation measures are prescribed in **Table 9**.

**Table 8: Revegetation completion criteria**

Aspect	Completion Criteria
Weeds	No greater than 10% weed cover within the revegetation area
	No Weeds of National Environmental Significance or environmentally significant weeds are present within the revegetation area
Diversity	At least 20 native species are represented within the revegetation area. Native upper and lower story species are represented within the revegetation area.
Cover	Native species have grown to cover at least 80% of the revegetation area

**Table 9: Revegetation measures**

Action	Timing	Responsibility
Engage a suitably qualified revegetation contractor to undertake revegetation within an indicative area covering a minimum of 8 ha ( <b>Figure 7</b> ).	Prior to construction	Environmental Consultant / Project Manager

Undertake revegetation utilising native species listed within the Local Government Landscape and Revegetation Guidelines, Plants for Possum Friendly Garden ( <b>Appendix 3</b> ), or suitable alternative.	Prior to and during construction	Revegetation Contractor
Undertake weed control and infill planting, if determined to be necessary, following the results of annual monitoring.	Prior to and during construction	Revegetation contractor
Topsoil taken from cleared areas will be stored used for revegetation works throughout the CA	Prior to and during construction	Revegetation contractor
Topsoil will be tested for pathogens and disease prior to use within the CA	Prior to, during and post construction	Revegetation contractor
If practicable, seed will be collected from within the CA and used in revegetation actions	Post Construction	Revegetation contractor

### Water Management

Groundwater monitoring bores are present within the Proposal area and CA. These bores will be monitored monthly during construction and at least two years post-development.

The Proposal will be implemented to ensure no groundwater level decrease outside of natural variation. As part of the subdivision application, an Urban Water Management Plan (UWMP) will be required for approval by the State. The UWMP will ensure stormwater and run-off are managed in a manner that does not harm the environment.

The management action outlined in **Table 10** will ensure the completion criteria within Section 8.2 are achieved. The monitoring regime for groundwater is outlined in **Table 11**. If completion criteria are not achieved prior to the formal handover, then the associated contingency measures within **Table 14** will be implemented.

**Table 10: Groundwater measures**

Action	Timing	Responsibility
Implement the management actions contained within the Urban Water Management Plan	Prior to and during construction	Project Manager
Maintain or improve the physical condition and ecological health of the vegetation surrounding the wetland (up to 50m) by not altering the groundwater regime within the wetland area and its protection zone by greater than normal climatic variances	Prior to and during construction	Environmental Consultant / Project Manager / Revegetation contractor

## 7 Monitoring and Evaluation

A monitoring and evaluation plan has been developed for the offset area to assess the success of the management actions to maintain and improve the biodiversity and habitat values of the offset area. The plan is described in the sections below. These monitoring objectives are designed to measure the effectiveness of the proposed management actions and provide for 'early-control' (management actions are effective).

Through detailed monitoring practices, it can be determined whether the management actions have resulted in an ecological gain or maintenance of the habitat for the WRP, increased habitat quality, and successful control of pest and weed species within the offset area. The monitoring and evaluation plan also allows for 'early-warning', where corrective actions may be required when management actions are not effective, so as to inform timely decisions on corrective actions to ensure performance targets and the completion criteria are achieved.

Monitoring results will be evaluated against the associated management objectives for the WRP.

### 7.1 Annual Compliance Reporting

In accordance with the EPBC Act requirements, a compliance report will be prepared and made accessible by the proponent on an annual basis for the time of the Offset Plan period (20 years). The annual compliance report will address how the conditions of the offsets, environmental outcomes, or milestones are met and the progress on management actions during the 12-month period. Any non-compliance with the conditions of the offsets will be made transparent within the document. The proponent will also have a chance to address how effective management actions have resulted in or led to the completion criteria.

The annual compliance report is adapted to document evidence that is both measurable and transparent. A copy will be provided to the DCCEE at the time of publishing and stored for periodic technical review and evaluations of the monitoring program and timeframes for implementing program components. A relevant review committee, including a suitably qualified ecologist, will undertake the periodic technical review and evaluation of the plan. Technical reviews will address, at a minimum, monitoring risks and response to risk levels and changing circumstances.

### 7.2 Rehabilitation Monitoring

The progress and success of habitat restoration will be monitored and assessed annually. Should there be areas where natural vegetation is not successful, infill planting will be implemented after three years. Rehabilitation planning and implementation will be led by a suitably qualified environmental consultant. The timing of monitoring of this aspect is dependent upon the bush regeneration contractor. Any planting that occurs at the offset area will have a prior commitment plan to maintain care of the newly planted vegetation, including the watering, mulching, weeding and use or removal of tree guard.

Monitoring of rehabilitated planting aspects will include:

- GPS coordinates and photos of the location and extent of rehabilitated site
- Annual collection of photo evidence at the same time each year, that details the success or failure of the rehabilitated plant or area, time of event, and location
- Baseline mapping will be consulted before each rehabilitation to establish the starting condition of the environment to measure performance
- For all rehabilitated areas and using the GPS points for reference, datasheets will detail the following information:
  - Success of rehabilitated stock
  - Average health and height of rehabilitated stock
  - Regeneration of naturally occurring native species
  - The presence of weed species within the rehabilitation area.

The collection of this data will be used to aid the precision and confidence of decisions and the state and rate of change to inform timely decisions on the effectiveness of the management actions and whether corrective actions are required. Rehabilitation of areas will result in a 60% or higher success survival rate after 12

months of planting. If this is not the case, the active regeneration will be repeated until the completion criteria for the corresponding year are achieved.

A detailed monitoring program for the revegetation and rehabilitation area (including weed levels) will be developed following consultation with the CoB. Fire management will be monitored in accordance with the relevant Bushfire Management Plan and any specific requirements stipulated by DBCA or the CoB.

**Table 11: Monitoring actions**

Parameter	Timing / frequency	Location	Purpose	Responsibility
<b>Delineation and access</b>				
Condition of access infrastructure.	Fortnightly for the first 6 months of instalment, then quarterly thereafter during construction.	Where bollards, gates and signage has been installed.	To ensure that access infrastructure is in good condition and there has been no unauthorised access into the CA.	Construction Contractor.
<b>Weed and pathogen management</b>				
Assessment of distribution, species and density/cover of weed species.	Annually until formal handover of the CA to the CoB.	Within retained vegetation within the CA.	To minimise the spread, or introduction, of weeds within retained vegetation within the CA.	Environmental Consultant / Project Manager.
Inspection of vehicles and machinery entering the CA.	At first entry into CA	Authorised access points into the CA (Figure 7).	To ensure appropriate dieback hygiene measures are being undertaken.	Vehicle operator.
<b>Waste management</b>				
Assessment of volume of waste within the CA	Annually until formal handover of the CA to the CoB.	Within the CA.	To minimise the volume of waste deposited within the CA.	Environmental Consultant / Project Manager.
<b>Fauna and pest management</b>				
Evidence/ presence of pests/ feral animals and associated signs of damage to native vegetation/ fauna, including assessment of Black Cockatoo breeding hollows (including artificial hollows) for the presence of feral bees.	Annually until formal handover of the CA to the CoB.	Within the CA.	To determine the presence of pests / feral animals within the CA and whether damage is occurring to native vegetation / fauna as a result.	Environmental Consultant / Project Manager.
<b>Revegetation</b>				
Annual revegetation monitoring, assessing: <ul style="list-style-type: none"> <li>• Weed species and percentage cover</li> <li>• Native species and percentage cover</li> <li>• Evidence of threatening processes (such as herbivory)</li> </ul>	Annually in Spring following initial planting works	Revegetation area (Figure 7).	To assess the efficacy of revegetation activities	Revegetation contractor
<b>Water management</b>				
Assessment of groundwater levels	Monthly until formal handover of the CA to the CoB.	Within the CA.	To minimise monitor groundwater levels and identify any potential changes.	Environmental Consultant / Project Manager.

### 7.3 Interim milestones

The following interim milestones have been set to mark the management actions' progress towards achieving the offset completion criteria. The interim milestones will be reviewed at five-year intervals (years 5, 10, 15 and 20) to manage and review expectations. The interim milestones are included in **Table 4**.

**Table 12: Interim Milestones**

Action	Timing of Action
1	All baseline mapping and monitoring has been complete for the management actions
5	<ul style="list-style-type: none"> <li>The offset area's habitat quality, as determined by the habitat values monitoring and scoring, has been maintained at 7 or above out of 10 for WRP habitat.</li> <li>Locally significant weeds within the offset area have been reduced by &gt;30% from the baseline monitoring assessment.</li> <li>Detection of pest animals in annual monitoring has declined by &gt;20% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years.</li> </ul>
10	<ul style="list-style-type: none"> <li>Habitat quality of the offset area, as determined by the habitat values monitoring and scoring, has improved by 1 point or more to result in habitat quality of 8 or above out of 10.</li> <li>Locally significant weeds within the offset area have been reduced by &gt;50% from the baseline monitoring assessment.</li> <li>Detection of pest animals in annual monitoring has declined by over half of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years.</li> </ul>
15	<ul style="list-style-type: none"> <li>Habitat quality of the offset area, as determined by the habitat values monitoring and scoring, has been maintained at 8 or above out of 10 for the offset area.</li> <li>Locally significant weeds within the offset area have been reduced by &gt;70% from the baseline monitoring assessment.</li> <li>Detection of pest animals in annual monitoring has declined by &gt;70% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years.</li> </ul>
20	<ul style="list-style-type: none"> <li>Habitat quality of the offset area, as determined by the habitat values monitoring and scoring, has been maintained at 8 or above out of 10 for the offset area.</li> <li>Locally significant weeds within the offset area have been reduced by &gt;90% from the baseline monitoring assessment.</li> <li>Detection of pest animals in annual monitoring has declined by &gt;70% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years.</li> </ul>

To contribute towards achieving this outcome, the reporting actions, timing, and responsibilities of the OAMP to maintain transparency and accountability are listed in **Table 5**.

**Table 13: Timing and responsibility of the Offset Area Management Plan actions**

Action	Timing of Action	Responsible Persons
Baseline monitoring	Within 12 months of commencement of the action	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager
Monitoring reporting within annual compliance report	Annually	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager
Auditing	Annually	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager
Risk management implementation	Annually	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager
Adaptive management program	Annually	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager
Review	Every three years or upon failure to meet any performance criteria	Environmental professional/s that are suitably qualified, as appointed and directed by the Project manager

## 8 Performance and Completion Criteria

Monitoring results, as well as the interim milestone outcomes prior to completion, will be used to determine if the offset completion criteria are met. The criteria are implemented to provide an indication of the success of the management measures implemented for the preservation and improvement of the WRP habitat within the offset area.

Additionally, if it is deduced that these criteria have failed to be met, corrective actions will be instated. Performance criteria are provided for each management action to manage the expectations of the completion criteria.

### 8.1 Performance Criteria

#### Management Action 1

- Baseline mapping of habitat and where mature, hollow-bearing trees are located within the offset area within the first six months of commencement.
- Identification of hydrology schemes necessary to maintain ecosystem functions within the habitats identified in the baseline mapping of the offset areas and areas with poor quality hydrology functions have been identified for improvement within the first 12 months from commencement.
- Buffers around the offset area have been applied within the first 12 months of commencement to protect habitat within the offset area from threats such as erosion and weed invasion from edge effects.

#### Management Action 2

- Baseline mapping to identify rehabilitation and regeneration areas and the development of an in-depth restoration plan completed for the offset area within the first 12 months of commencement.
- Degraded areas of hydrology identified and begun restoration processes to a high quality to maintain ecosystem function within the first two years.
- Areas allowed to regenerate will display signs of native vegetation regrowth at rates expected for the species.
- Habitat quality assessments are completed annually for the first three years and following at years 5, 10, 15, and 20.
- Habitat quality scores will not decrease in the annual reporting from the baseline data. Monitoring will continue annually if reduction occurs until values return to the baseline level.
- Habitat value scores will have improved by 1 or more points by the 10th year from commencement, in line with the interim milestones. If habitat quality scores do not improve by 1 point, monitoring will continue annually until this value is reflected.

## 8.2 Completion Criteria

The offset area will have been successful when it completes all three of the following completion criteria points:

- WRP population has maintained pre-development levels or grown after year 5 and remains stable through years 10, 15, and 20. Annual surveys will be undertaken for the first 5 years, after which the survey regime will be reviewed
- Habitat value scores within the offset area will have improved by 1 or more points
- Locally significant weeds within the offset area have been reduced by >90% from the baseline monitoring assessment.
- WoNS within the offset area do not exceed densities over 1%.
- Pest animals are not detected within the offset area for a period of two or more year

## 8.3 Corrective Actions

If the performance criteria identified is not met, an adaptive management strategy is to be adopted to ensure compliance (i.e. in instances of drought, fire, disease, or planting failure). When weeds persist on-site or excessive mortality within revegetation and rehabilitation zones, management strategies are to be evaluated and updated to ensure that performance criteria and interim milestones are met. Reviews of the offset area management will occur every three years and/or upon failure to meet the performance criteria.

If it is found that the completion criteria are not met within the timeframe, the following corrective actions will be adopted:

- Where the habitat quality assessment score drops below the 7 out of 10 or does not reach the required habitat score at the interim milestone checkpoints, management actions to restore and improve habitat will be increased in frequency and at a higher rate of control until the completion criteria is achieved.
- If locally significant weeds or pest animals are detected, the management actions and their frequency will be increased until the completion criteria have been achieved.
- Where vegetation rehabilitation has a success rate of below 60%, the active regeneration measures will be repeated until the completion criteria are achieved.
- In the instance of unplanned fires or flooding during the monitoring interval, any negative impacts to the habitat quality score will be regarded. Areas affected will be compared to monitoring sites that remain unaffected and were previously at the same, or nearest to, the quality of the affected site. Any resulting disturbance because of these instances, such as weed infestation, will be managed to ensure the completion criteria for that value are attained.

Any alterations to any component of this OAMP will be approved by the relevant regulatory authority, along with supporting information that clearly outlines the component to be altered and the reasoning for the alteration.

Additional detailed corrective actions for each management action are provided in

**Table 14: Corrective actions**

Parameter	Trigger criteria	Action	Responsibility
Delineation and access	Damage has been reported to access infrastructure including bollards, signage or gates	Take necessary steps to repair infrastructure	Project manager
	Unauthorised vehicle reported within the CA	Determine how access was gained and if possible, the likely time of access. Implement remedy, which could include repairing broken infrastructure or the installation of additional signage.	Project Manager
Weed and pathogens	Identification of a "Declared Pest" weed species within the CA (e.g. <i>Zantedeschia aethiopica</i> )	Undertake weed control as required, with the objective of eradicating all identified Declared Pests	Environmental consultant / Revegetation contractor
	Monitoring indicates that, in those areas not originally classed as completely degraded, weed densities are over 10%	Develop a weed control program and appoint an experienced contractor to manage weeds within the CA, with the objective of reducing weed cover to >10%.	Environmental Consultant / Project Manager
	Vehicles which have not been inspected for mud and soil access the CA	The vehicle must be stopped and inspected for mud and soil. If vehicle is deemed to be clean it can continue to be used on the work site. If a build-up of mud is detected, then it must be removed off site for cleaning.	Vehicle operator
Waste	Monitoring indicates that the level of waste within the CA has increased from levels recorded in the first year of monitoring	Undertake waste removal from the CA as required.	Environmental Consultant / Project Manager
Fauna and pests	Native fauna deaths from predation observed during monitoring in areas of retained vegetation.	<ol style="list-style-type: none"> <li>Investigate cause</li> <li>Undertake intervention or remediation works if required (move bins, fencing, trapping, baiting or hive removal).</li> <li>Monitor success of works.</li> </ol>	Environmental Consultant / Project Manager.
	Approximately 20% of the monitoring sites show evidence of damage by animals (i.e. herbivory).		
	Black Cockatoo breeding hollows, including artificial hollows within the CA contain feral bees.		
Bushfire	Bushfire risk will be managed in close consultation with both the CoB and DBCA. In the event that an unplanned fire occurs within the CA, FESA will be called to attend and extinguish the fire. Phone 000.		
Revegetation	Annual monitoring indicates that less than 20 native plant species are represented within the revegetation area	Undertake infill planting / seeding with additional species as required	Revegetation Contractor
	Annual monitoring indicates that native plant species are not achieving 80% cover of the revegetation area	Determine cause of deficient coverage. Undertake infill planting as required	Revegetation Contractor
	Annual monitoring indicates that weed cover is greater than 10%	Implement a weed control programme, including at minimum two rounds of weed control in Winter and Spring	Revegetation Contractor
	Annual monitoring identifies a WONS species within the revegetation area		
	Annual monitoring indicates herbivory as the primary reason for plant mortality	Depending on the extent of herbivory observed, undertake exclusion fencing of the revegetation area or install tree guards around planted seedlings	Revegetation Contractor

Parameter	Trigger criteria	Action	Responsibility
	Upon formal handover of the CA to the CoB, any of the completion criteria are determined not to have been met	In consultation with the CoB, determine additional management actions to be implemented. These may include: <ul style="list-style-type: none"> <li>• Extending the period of management of the revegetation area for another year</li> <li>• Expanding the area subject to revegetation</li> <li>• Utilising species not listed within the</li> <li>• Revising the completion criteria</li> </ul>	Environmental Consultant
Groundwater	Monitoring indicated a drop in level outside of seasonal variations	Determine cause of drop in groundwater levels and report to the CoB and Department of Water and Environmental Regulation.  Remedial actions will be determined in consultation with DWER, and informed by the outcome into the source of the drop in groundwater levels.	Environmental Consultant

## 9 Risk Management

This section provides a qualitative risk assessment, which addresses the risks associated with the objectives and outcomes of the offset area. This risk assessment has been implemented in accordance with the EPBC Act Environmental Management Plan Guidelines (DCCEEW 2014). A risk matrix for the likelihood and consequences used to determine risk values is presented in **Table 15** and **Table 16**.

The risk assessment for the management objectives of this OAMP is detailed in **Table 17**. The risk assessment analyses the risk of failure to achieve the OAMP's management actions.

**Table 15: Risk Framework**

		Consequence				
		Minor	Moderate	High	Major	Critical
Likelihood	Highly Likely	Medium	High	High	Severe	Severe
	Likely	Low	Medium	High	High	Severe
	Possible	Low	Medium	Medium	High	Severe
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Low	Medium	High

**Table 16: Likelihood and consequence**

<b>Qualitative measure of likelihood (how likely is it that this event/circumstances will occur after management actions have been put in place/are being implemented)</b>	
Highly likely	Is expected to occur in most circumstances
Likely	Will probably occur during the life of the project
Possible	Might occur during the life of the project
Unlikely	Could occur but considered unlikely or doubtful
Rare	May occur in exceptional circumstances
<b>Qualitative measure of consequences (what will be the consequence/result if the issue does occur)</b>	
Minor	Minor risk of failure to achieve the plan's objectives. Results in short-term delays to achieving plan objectives, implementing low-cost, well-characterised corrective actions.
Moderate	Moderate risk of failure to achieve the plan's objectives. Results in short term delays to achieving plan objectives, implementing well characterised, high cost/effort corrective actions.
High	High risk of failure to achieve the plan's objectives. Results in medium-long term delays to achieving plan objectives, implementing uncertain, high cost/effort corrective actions.
Major	The plan's objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies.
Critical	The plan's objectives are unable to be achieved, with no evidenced mitigation strategies.

**Table 17: Risk assessment and management**

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk				Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	M	H	S		
To legally secure approved offset properties for conservation.	Failure to legally secure approved offset site	The land is currently owned by the Proponent					N/A. Protection measure will be in place prior to delivery of the offset	N/A
	Legislative reform prejudices proposed tenure arrangements for offset properties.	The offset area is legally owned by the Proponent and will be placed into a conservation covenant and appropriate legal mechanisms to provide protection for no less than 20 years. The binding nature of the conservation covenant will not be impacted by tenure of landowner changes					N/A. Protection measure will be in place prior to delivery of the offset	N/A
To maintain existing habitat values	Failure to adequately document the baseline condition of the existing environment (i.e. no context to assess uplift in condition)	Identification and baseline mapping of all suitable areas of habitat, consistent with relevant habitat and/or foraging quality scoring tools (DCCEEW, 2022).					Annual assessment of habitat condition against DCCEEW approved guidelines or conservation advice	Peer review of collected datasets to ensure data integrity and compliance with DCCEEW expectation
	Alterations to hydrology that may result in impacts to existing habitat values associated with the habitat for MNES species	Maintenance of existing hydrology schemes that support current ecosystem functions in offset areas. Implementation of the UWMP will ensure no reduction in water quality, flow or quantity to the offset area as a result of the action when compared to exiting baseline levels					Annual monitoring of habitat condition and hydrological flows into the offset area.  Trigger actions as per the UWMP	Design to maintain existing natural hydrological flows. In instances of current impediment to hydrological flows, measures will be implemented to reinstate natural flow regimes
	Establishment of unauthorised or ad-hoc access tracks that may lead to environmental degradation	Installation of, gates, fencing, or signage at strategic locations that outline the offset area. Access to the offset area will be maintained only to allow access for rehabilitation, management and emergency access.					Annual assessment of habitat condition against DCCEEW approved guidelines or conservation advice	In instances where damage by unauthorised access/tracks are detected, these are to be rehabilitated to reinstate the pre-disturbance habitat quality
	The occurrence of uncontrolled wildfires	<ul style="list-style-type: none"> <li>Liaison with private landholders, local government, DFES, and DBCA to provide advice on the offset area's presence and significance.</li> <li>Management measures will be discussed with DBCA and should appropriate measures be identified, these will implemented through the OAMP, WRPMP and notification provided to DCCEEW</li> </ul>					N/A	N/A—Active bushfire management actions are likely to contradict DCCEEW expectations for the offset area. Passive management actions, including enabling access to emergency services will be implemented.  Alternative corrective actions will be explored with DBCA and DFES.
	Impacts to the offset area as a result of construction activities	The design and implementation of buffers around the offset area to protect from threats such as erosion and weed invasion from edge effects and can act as connectivity for a wildlife corridor within the first 12 months from commencement					Regular monitoring (weekly) during the construction period is to occur	In instances where damage to native plants outside of the construction envelope occurs, works within the area are to cease until the cause of the damage can be ascertained and corrected. Damaged vegetation communities are to be re-established to reflect their pre-disturbance state
Rehabilitation and regeneration	Failure to adequately document the baseline condition of the existing environment (i.e. no context to assess uplift in condition)	Baseline mapping to identify rehabilitation and regeneration areas and the development of an in-depth restoration plan to be completed within the first 12 months of commencement					Assessment of existing habitat condition against existing DCCEEW approved guidelines and conservation advice	Peer review of collected datasets to ensure data integrity and compliance with DCCEEW expectation
	The use of species not of local provenance in the rehabilitation program.	<ul style="list-style-type: none"> <li>Encouragement of natural regeneration and actively identify patches of poor to moderate habitat quality and implement restoration to a high quality within the first two years. This is inclusive of restoring degraded patches to meet improved quality scores.</li> <li>Infill planting is to be undertaken by a suitably qualified consultant and overseen by an environmental specialist to ensure local species are selected and planted.</li> </ul>					Annual monitoring and assessment of existing habitat condition against existing DCCEEW approved guidelines and conservation advice	Where plants of non-local provenance are identified, they are to be removed and replaced with appropriate local species.
	Failure of natural regeneration to reach maturity	Where regeneration occurs within the offset area, measures that will support the regeneration to maturity (e.g. provide tree guards to minimise grazing, weed management) will be provided					Annual monitoring and assessment of existing habitat condition against existing DCCEEW approved guidelines and conservation advice	<ul style="list-style-type: none"> <li>Where failure of plants to establish or reach maturity is identified, an investigation into determining the cause is to be undertaken and replating is to take place to replace the individual plants lost</li> <li>Outcomes of the investigation and confirmation of the implementation of remedial actions are to be reported to DCCEEW</li> </ul>
	Rehabilitation activities undertaken in a manner that results in failure due to inappropriate methods	All rehabilitation activities are to be conducted by a suitably qualified bush regeneration contractor, and relevant advice from local authorities will be taken into consideration before undertaking restoration works					Annual assessment of habitat condition against DCCEEW approved guidelines or conservation advice	<ul style="list-style-type: none"> <li>Where failure of plant establishment is identified, an investigation is to be undertaken to identify the cause.</li> <li>A review of the management actions and implementation measures will be undertaken to ensure compliance with performance targets.</li> </ul>

Management objective/desired outcome	Event or circumstance	Relevant management actions/measures	Residual risk				Trigger detection and monitoring activity/ies	Feasible/effective corrective actions
			L	M	H	S		
							<ul style="list-style-type: none"> <li>Outcomes of the investigation and confirmation of the implementation of remedial actions are to be reported to DCCEEW</li> </ul>	
	Loss or reduction of habitat quality for conservation significant fauna species within the offset area	<ul style="list-style-type: none"> <li>Supplementary planting will focus on species that provide foraging habitat, as well as enhance movement and local population viability.</li> <li>Stags, logs and mature and old-growth trees with hollows will be maintained within the offset area to provide important habitat for fauna</li> </ul>					<ul style="list-style-type: none"> <li>Annual assessment of habitat condition against DCCEEW approved guidelines or conservation advice</li> <li>Annual species observation survey to be undertaken</li> </ul>	<ul style="list-style-type: none"> <li>A review of habitat conditions is to be taken within the offset area.</li> <li>Review of feral animal presence, or competing species presence (e.g. Brushtail Possum)</li> <li>Where an identified reduction in habitat features is observed, remedial actions will be discussed (and agreed to) with the relevant subject matter experts (e.g. DBCA) before implementation.</li> <li>Outcomes of the investigation/review and confirmation of the implementation of remedial actions are to be reported to DCCEEW</li> </ul>
	Failure of supplementary planting because of failure to establish	All supplementary planting that occurs within the offset area will have a prior commitment plan to maintain care of the newly planted vegetation, including the watering, mulching, weeding and use or removal of tree guards					Annual monitoring and assessment of existing habitat conditions against existing DCCEEW approved guidelines and conservation advice	Review of the management measures and application of correction measure (e.g. regular watering, weeding, etc.)
	Failure of rehabilitation areas to meet the requirements of an offset (i.e no uplift in ecological value over time)	Evidence of rehabilitation success and survival rate will be reported annually. All rehabilitation is to commence within three years of Project commencement. In the third and following annual compliance reports, any regeneration areas that require infill replanting will be identified, and regeneration actions will be described.					Annual monitoring and assessment of existing habitat conditions against existing DCCEEW-approved guidelines and conservation advice	Peer review of collected datasets to ensure data integrity and compliance with DCCEEW expectations. In instances of non-compliance, a review of the OAMP will occur with the implementation of corrective actions (e.g., supplementary planting, weed control, analysis, and augmentation of hydrological flows).
	Failure to demonstrate ecological uplift over time (i.e. lack of demonstrated evidence to support compliance with the OAMP)	Habitat quality assessments are to be conducted annually for the first three years and then at year 5, 10, 15, and 20 to determine if the habitat quality score has been maintained and improved by 1 point or more (score of 8 or above for WRP habitat) by year 20 for the offset area. Habitat quality monitoring is to be reported in the annual report adjacent to the years of assessment					Annual monitoring and assessment of existing habitat condition against existing DCCEEW approved guidelines and conservation advice	Peer review of collected datasets to ensure data integrity and compliance with DCCEEW expectations. In instances of non-compliance, a review of the OAMP is to occur with the implementation of corrective actions (e.g. supplementary planting, weed control, analysis and augmentation of hydrological flows)
To achieve performance targets and completion criteria for all MNES	Failure to meet five year performance targets	Within five years: <ul style="list-style-type: none"> <li>Habitat quality of the offset area, as determined by the habitat values monitoring scoring, has been maintained at 7 or above out of 10 for the offset area for the habitat of all three matters</li> <li>Locally significant weeds within the offset area have been reduced by &gt;30% from the baseline monitoring assessment</li> <li>Detection of pest animals in annual monitoring has declined by &gt;20% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years</li> </ul>					Monitoring is conducted on an annual basis to assess the progress of the offset in relation to existing DCCEEW approved guidelines and conservation advice.	In instances where non-conformance is detected (during annual monitoring), correct actions to resolve the non-conformance are to be implemented. Review of the OAMP is to occur at three yearly intervals or in instances of non-compliance.
	Failure to meet 10 – 20 year performance targets	<ul style="list-style-type: none"> <li>Habitat quality of the offset area, as determined by the habitat values monitoring and scoring, has improved by 1 point or more to result in a habitat quality of 8 or above out of 10 for the offset area for the habitat of all three matters and</li> <li>Locally significant weeds within the offset area have been reduced by &gt;75% from the baseline monitoring assessment</li> <li>Detection of pest animals in annual monitoring has declined by over 70% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years.</li> </ul>					Monitoring is conducted on an annual basis to assess the progress of the offset in relation to existing DCCEEW approved guidelines and conservation advice.	In instances where non-conformance is detected (during annual monitoring), correct actions to resolve the non-conformance are to be implemented. Review of the OAMP is to occur at three yearly intervals or in instances of non-compliance.
	Adjacent/regional landowner's land management practices fail to support attainment of offset outcomes.	Implementation of a vegetation buffer, to be funded by the Proponent, to ensure edge effects from adjoining development does not impact the offset area, and that habitat quality scoring can be improved through the removal of these impacts.						Monitoring is conducted on an annual basis to assess the progress of the establishment and maintenance of the vegetation buffer

## **10 Timing and mechanisms for protection**

The proposed offset area is on land currently owned by the Proponent. Additional offset site options will be explored to ensure adequate contingencies should the on-site offset not progress. The proposed conservation gains will be achieved through sound management measures tailored to the species and community with regular monitoring and clear performance outcomes.

The offset area will be legally secured as soon as practicable and for the complete approval time by way of a conservation covenant under the EPBC Act 1999 or alternatively suitable legislative mechanism. A conservation covenant will be registered on the title to ensure offset measures are in place to ensure the longevity of the offset once the approval expires or if the offset area is ceded to a new owner, such as the Local Government, for management as part of the wider reserve land suite.

## 11 Consistency with Commonwealth Offset Principles

The strategy for compensating significant residual impacts to MNES resulting from the Proposal is consistent with the ten offset principles as outlined in the Commonwealth Environmental Offsets Policy (DSEWPaC 2012).

**Table 18** summarises how the ten principles were considered in the development of the offset strategy for Carnaby's Black Cockatoo and Baudin's Black Cockatoo.

**Table 18: Consideration of the Commonwealth offset principles against relevant MNES**

Offset Principle	Consideration
<p>1. Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter</p>	<p>The implementation of the offset will result in a net increase in conservation outcomes, as the rezoning of land within the CA and its subsequent protection under a conservation covenant will lead to a long-term net increase in remaining native vegetation and habitat for the conservation of significant species within the local Dunsborough area. Furthermore, the enhancement actions, including revegetation, will support the improvement of both abundance and diversity of plant species within the CA, enhancing habitat for MNES and supporting bushfire recovery.</p>
<p>2. Suitable offsets must be built around direct offsets but may include other compensatory measures</p>	<p>The conservation and improvement of the on-site Conservation Areas, which contains Black Cockatoo habitat and potential breeding trees, and habitat for WRP, are a direct offset. The proposed area of habitat to be improved and acquired will meet 100% of the offset requirement as calculated using the Commonwealth Offsets Calculator (<b>Appendix 1</b>).</p> <p>The offset approach will also provide funding to either the Local Government or a suitable non-governmental organisation to undertake additional actions within the local Dunsborough region, benefiting both WRP and Black Cockatoos. These actions will include, as an example, revegetation outside of the CA, installation of fauna crossing or artificial breeding habitat, subject to discussion with relevant experts including DBCA.</p>
<p>3. Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter</p>	<p>Total offset requirement was calculated using the Commonwealth Offsets Calculator (<b>Appendix 1</b>). This Calculator factors the level of statutory protection into the determination of the area required and nature of offset.</p>
<p>4. Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter</p>	<p>As such, the offset is expected to be suitable and in proportion to the level of statutory protection applied to Carnaby's, Baudin's and Forest Red-tailed Black Cockatoo, and WRP habitat. Direct offsets have been provided for all MNES, with 100% of the direct offset requirement being met.</p> <p>The area and condition of habitat located within the offset site will be proportionate to that being impacted by the Proposal, as calculated using the Commonwealth Offsets Calculator. The direct offset will comprise 100% of the requirement.</p>

Offset Principle	Consideration
<p>5. Suitable offsets must effectively account for and manage the risk of the offset not succeeding</p>	<p>With regard to the Conservation Area, corrective actions have been included within the OAMP and WRPMP to ensure that all proposed management actions are implemented.</p> <p>A 90% confidence in result has been applied within the offsets calculator accordingly for the rezoning of land and application of the conservation covenant, while a confidence level of 65% has been applied for revegetations actions .</p>
<p>6. Suitable offsets must be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action)</p>	<p>State acquisition of privately-owned land and provision of funding for active on-ground management by the DBCA presents a conservation outcome beyond what would occur without implementation of this Offsets Strategy.</p> <p>State Government acquisition of privately-owned sites for conservation is initiated by their proposed use as offset sites. Further, conservation and on-ground management of the acquisition site and Conservation Area is not required or planned under any other planning or approval process and is entirely instigated as a result of this Offsets Strategy. Management of acquired land will be over and above that which is already experienced onsite.</p>
<p>7. Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable</p>	<p>The proposed offset is effective in meeting and in some cases exceeding the significant residual impacts. The Offset Management Plan has been prepared in accordance with the DCCEEW Guidelines.</p> <p>The management actions contained therein will be designed according to the SMART principle, in that they are specific, measurable, attainable, relevant, and time-bound. In terms of the CA, the OAMP and WRPMP which dictates the management for this area has been developed in accordance with the DAWEs Environmental Management Plan Guidelines (2014). The management actions contained therein have been designed according to the SMART principle, in that they are specific, measurable, attainable, relevant, and time-bound. This offset strategy will be advertised for public consultation as part of the commonwealth environmental assessment process.</p>
<p>8. Suitable offsets must have transparent governance arrangements, including being able to be readily measured, monitored, audited and enforced</p>	<p>The acquisition of the offsite offset which contains existing WRP and Black Cockatoo habitat and potential Black Cockatoo breeding trees, the provision of funding to the DBCA for on-ground management, and the improvement of the on-site Conservation Area will deliver an overall conservation outcome that maintains the viability of MNES being protected at a local and regional level.</p>

## 12 References

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## Appendix 1: Offset Calculations

An offset calculation has been prepared for the Proposal using the Offset Assessment Guide, demonstrating that this package component provides xx% of the overall offset. This offset consists of the following measures:

- The entire extent of the proposed CA is transferred into conservation covenant and provided to the City of Busselton for management as per previous surrendered bushland for earlier development stages
- Installation of artificial dreys and nesting hollows for local WRP population and Black Cockatoos, and funding to the City of Busselton for their maintenance over a period of less than 5 years
- Revegetation, rehabilitation and wetland enhancement within the CA to improve the local biodiversity and habitat quality, and
- Potential installation of a fauna crossing over Cape Naturaliste Road, providing a safe linkage between the CA and the adjacent Marri Conservation Reserve, subject to discussion with the DBCA and City of Busselton.

The proposed Conservation Area provides a local conservation outcome in a highly constrained area.

Noting the quantum of impact for WRP (critically endangered) is higher than that for Black Cockatoos (endangered), and that vegetation in the disturbance footprint is absent suitable breeding trees, no additional direct offset is proposed for Black Cockatoos during this stage.

A summary of the offset calculator inputs relating to MNES habitat has been provided in **Table 19**.

**Table 19: Offset calculator values (Onsite Offset)**

Criteria	Value	Validation
<b>Impact site</b>		
Area		
Quality		
Total quantum of impact		
<b>Time over which loss is averted</b>		
Start area		
Risk of loss without offset		
Risk of loss with offset		
Confidence in result (top row)		•
Time until ecological benefit		
Start quality		
Future quality without offset		
Future quality with offset		
Confidence in result (bottom row)		
<b>% of impact offset</b>		

## **Appendix 2: Conservation Area Management Plan**

## **Appendix 3: Plant Guide for Revegetation**