

EPBC 2024/09956

Caloundra Transport Corridor Upgrade

Offset Management Plan

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Executive summary

Project background

The Sunshine Coast Council (SCC), in partnership with the Department of Transport and Main Roads (TMR), proposes to construct and operate a new integrated transport corridor in Caloundra, Queensland (Qld) referred to as the Caloundra Transport Corridor Upgrade Project (the 'Project' or proposed action).

On 1 August 2024, the Project was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and was declared a 'controlled action' (EPBC 2024/09956) on 30 October 2024.

Subsequently, on 14 November 2024, a request for additional information required for assessment by Preliminary Documentation was issued by DCCEEW under Section 95A(2) of the EPBC Act. Specifically, Section 6 (proposed offsets) of the request for additional information required the preparation of an Offset Proposal (OP) and Offset Management Plan (OMP) to inform DCCEEW's assessment of potential Project impacts to matters of national environmental significance (MNES). Further Attachment B of the request for additional information provided specific requirements for both the OP and the OMP. This document (i.e. OMP) has been prepared in response to Section 6 and Attachment B of the request for additional information.

Significant residual impacts on matters of national environmental significance overview

The Project EPBC Act Preliminary Documentation (Aurecon, 2025) identified three protected matters that are likely to be subject to significant residual impacts, including:

- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland Threatened Ecological Community (Coastal Swamp Sclerophyll Forest TEC)
- Koala habitat
- Grey-headed flying-fox (GHFF) habitat.

It is noted that whilst the proposed offset site does provide for GHFF habitat, GHFF has been formally excluded from the OMP, following advice received from DCCEEW on 12 November 2025. Consequently, this document does not address any further offset requirements for the GHFF. The target MNES values for this OMP are the Coastal Swamp Sclerophyll Forest TEC and Koala habitat.

Proposed offset site

In accordance with the Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities [DSEWPC], 2012) under the EPBC Act, offsets must be provided for any MNES that are expected to experience a significant residual impact due to the proposed activity.

Based on the significant residual impacts, the provision of 18.5 hectare (ha)¹ of direct offsets has been proposed to compensate for the Project impact to the Coastal Swamp Sclerophyll Forest TEC and fauna habitats (Koala). The total significant residual impacts associated with the Project and the proposed quantum of offsets are outlined in Table E.1.

Table E.1 Significant residual impacts quantum and the quantum of proposed offsets

MNES	Status	Habitat type impacted	Significant residual impact associated with proposed action (ha)	Proposed offset site area (ha)
Coastal Swamp Sclerophyll Forest TEC	Endangered	-	2.09	18.5
Koala habitat	Endangered	Foraging and breeding, shelter and dispersal	4.65	18.5

¹ The proposed quantum of offsets exceed that required to achieve no-net loss (i.e. legislative compliance). Therefore the proposed offset will ultimately result in a net gain in relation to the three protected matters associated with this OMP.

The proposed offset site (part of Lot 900 on SP209288) is located adjacent to the Bobbie Sattler Nature Refuge, within the Racecourse Road Environment Reserve in the locality of Corbould Park, Queensland. The proposed offset site is located approximately 6 kilometres (km) west of Caloundra and has been historically cleared for agricultural purposes and residential development. The proposed offset site is currently a Reserve owned by the Queensland Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, but administered by SCC.

An assessment to determine the suitability of the proposed offset site was conducted by Aurecon in 2024 and 2025. Vegetation within the proposed offset site mostly consists of unmapped regrowth considered to be analogous to the Coastal Swamp Sclerophyll Forest TEC. The presence of the Coastal Swamp Sclerophyll Forest TEC within the significant residual impact area forms the first requirement for proposed offsets. This protected matter is listed as Endangered under the EPBC Act and is identified within the Commonwealth conservation advice for the community as being analogous to Regional Ecosystem (RE) 12.3.4 as mapped by the Queensland Government. This community is known to provide foraging and shelter habitat for the Koala.

The assessment of the suitability of the proposed offset site identified that the necessary conditions (i.e. habitat types and area) occur to meet the Project offset obligations.

Offset management

The primary goal for managing the proposed offset site is to enhance habitat quality for the target offset MNES. The intended conservation result focuses on protecting and restoring habitat, expanding habitat size and resources, improving patch connectivity, and mitigating threats to support sustainable populations of the three MNES values. This will be achieved by meeting completion criteria within 20 years, alongside interim performance milestones set every five years. Successfully reaching these completion criteria are anticipated to improve ecosystem functionality and bolster resilience. After the offset period (defined as either 20 years or the time required to meet the completion criteria, whichever is longer) ongoing general land management practices will suffice to uphold the conservation gains.

This document outlines the proposed offset site parameters and management actions to be implemented on the proposed offset site. It includes details on planned management activities, monitoring protocols, corrective and adaptive management measures, as well as reporting obligations, all aimed at ensuring compliance with the EPBC Act.

Offset monitoring

To assess and ensure the success of management measures, ongoing monitoring of the proposed offset site is proposed, enabling adjustments to management actions when needed. This process also involves documenting progress against performance milestones and completion criteria. Through monitoring, it will be confirmed that the offset activities enhance ecosystem resilience, thereby delivering persisting conservation outcomes for the target offset MNES.

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Acronyms and abbreviations

Terminology	Definition
ALA	Atlas of Living Australia
ASL	above sea level
Biosecurity Act	<i>Biosecurity Act 2014</i> (Qld)
CEEV	Critically Endangered, Endangered, and Vulnerable
cm	centimetres
Coastal Swamp Sclerophyll Forest TEC	Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland Threatened Ecological Community
Cth	Commonwealth
DAWE	Department of Agriculture, Water and the Environment (former)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DotE	Department of the Environment (former)
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities (former)
EDL	ecologically dominant layer
EP Act	<i>Environmental Protection Act 1994</i> (Qld)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
GHFF	Grey-headed flying-fox (<i>Pteropus poliocephalus</i>)
ha	hectares
IBRA	Interim Biogeographic Regionalisation for Australia
kg	kilograms
km	kilometres
km ²	square kilometres
m	metres
mm	millimetres
MNES	matter of national environmental significance
NC Act	<i>Nature Conservation Act 1992</i> (Qld)
NSW	New South Wales
OMP	Offset Management Plan
PMST	Protected Matters Search Tool
Project	Caloundra Transport Corridor Upgrade Project
proposed action	Caloundra Transport Corridor Upgrade Project
Qld	Queensland
RE	Regional Ecosystem
SCRC	Sunshine Coast Regional Council
SQP	suitably qualified person/s
TEC	threatened ecological community
TMR	Department of Transport and Main Roads
VDec	Voluntary Declaration under the <i>Vegetation Management Act 1999</i> (Qld)
WoNS	Weeds of National Significance

Key definitions

Term	Definition
approval holder	The person to whom the EPBC Act project approval is granted and is responsible for compliance with conditions (if any) applied to a project.
benchmark	Benchmarks are quantitative values for regional ecosystems derived from data collected from field-based reference sites for each site condition attribute assessed in BioCondition methodology.
commencement of the action	Means the first instance of any specified activity associated with the proposed action including clearing and construction. Excludes minor physical disturbances defined within the EPBC Act controlled action approval.
commencement of the OMP	Means the first instance of any specified management actions associated with this OMP. This should occur within 12 months of the commencement of the action.
completion criteria	Final habitat quality scores and criteria required to meet the required conservation gains for each target offset MNES over the duration of the offset.
disturbance footprint	The disturbance footprint is defined as the proposed action footprint (permanent and temporary disturbance areas) that will be directly impacted by the proposed action.
duration of the offset	The duration of the offset is defined as 20 years or until the completion criteria are achieved, whichever is longer.
EPBC Act	The <i>Environment Protection and Biodiversity Conservation Act 1999</i> is Australia's national environmental law. It provides a legal framework to protect the environment, especially those aspects that are matters of national environmental significance.
EPBC Act assessment	The significant impact assessment for MNES undertaken as part the Project Preliminary Documentation.
habitat quality score/habitat quality	A method of evaluating habitat quality within a particular community based on key indicators including site condition, site context and species habitat index (if necessary). The method produces a score out of 10, where the maximum score of 10 represents a fully intact system. Scores of 4, 5 and 6 may indicate good quality regrowth or medium value habitat.
impact area	The area to be disturbed as part of the proposed action.
matters of national environmental significance (MNES)	Environmental values protected under the Commonwealth EPBC Act. Significant residual impacts to these values may require offsets under the legislation.
Modified Habitat Quality Assessment (MHQA)	The Modified Habitat Quality Assessment (MHQA) method is a best-practice approach to derive habitat quality scores (HQS) for input to the EPBC Act Offset Assessment Guide (offset calculator). These methods are intended to generate a HQS that represents key habitat values provided by a site (<i>site condition</i>) and values of its surrounding landscape (<i>site context</i>). When applied to threatened species, HQS also quantifies the value of both the site and the species population (<i>species stocking rate</i>).
Offset Management Plan (this document)	A document that outlines how an area of land, set aside as a biodiversity offset, will be managed to compensate for significant residual impacts caused by a proposed action on a protected matter (e.g. MNES).
performance criteria	Specific measures identified to determine the effectiveness of management actions and, when required, implement corrective actions to maintain progress towards interim performance targets and the completion criteria.
pest/s	Means any pest species identified under the <i>Biosecurity Act 2014</i> (Qld) known to provide threats to the Koala and/or degrade the quality of the Coastal Swamp Sclerophyll Forest threatened ecological community, Koala habitat and/or Grey-headed flying-fox habitat, or its ability to regenerate.
Project disturbance footprint	The extent of disturbance associated with the proposed action.
Regional Ecosystem (RE)	A vegetation community in a bioregion that is consistently associated with a combination of geology, landform, and soil. Regional Ecosystems are described in the Regional Ecosystem Description Database, produced by the Queensland Herbarium.

Term	Definition
regrowth vegetation	Vegetation which forms the predominant canopy of the community but does not meet either: a) 50% of the undisturbed predominant canopy; or b) more than 70% of the vegetation's undisturbed height; and c) is composed of species characteristic of the vegetation's predominant canopy and is greater than 15 years.
remnant vegetation	Vegetation which forms the predominant canopy of the community that: a) covers more than 50% of the undisturbed predominant canopy; and b) averages more than 70% of the vegetation's undisturbed height; and c) is composed of species characteristic of the vegetation's undisturbed predominant canopy.
suitable habitat	A species preferred environment required to sustain a viable population. Suitable habitat may include breeding, foraging and shelter resources for fauna or preferred environmental conditions for flora.
suitably qualified ecologist	Means a person who has relevant professional qualifications and at least three years' work experience designing and implementing flora and fauna surveys and management plans for the Koala and/or the Grey-headed flying-fox using relevant protocols, standards, methods and/or literature.
target offset MNES	The following MNES where significant residual impacts by the proposed action are likely: <ul style="list-style-type: none"> ■ Coastal Swamp Sclerophyll Forest threatened ecological community ■ Koala ■ Grey-headed flying-fox.
Pest animal	Pest animal as listed in Schedule 2 of the <i>Biosecurity Act 2014</i> (Qld)
proposed offset property	Includes the entirety of the Racecourse Road Reserve (Lot 900 on SP209288) which has an area of approximately 37.1 hectares.
proposed offset site	Part of Lot 900 on SP209288, located on Racecourse Road, Corbould Park, Queensland. Totalling 18.5 ha which will be legally secured and managed in accordance with this Offset Management Plan.
threatened ecological community (TEC)	An ecological community that is a naturally occurring group of native plants, animals and other organisms that are interacting in a unique habitat and listed under the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act)
threatened species	Means Extinct (EX), Extinct in the Wild (XW), Critically Endangered (CE), Endangered (E), Vulnerable (V) or Conservation Dependent (CD) under the EPBC Act.
vegetation community	An identified vegetation community (i.e. structure, composition, condition and/or underlying geology) verified from a field survey. Communities may include Regional Ecosystems, remnant vegetation and/or disturbed/novel ecosystems (e.g. parkland, disturbed roadsides, etc.).
weed/s	Means any weed species identified within the Weeds of National Significance (WoNS) and weed species listed under the <i>Biosecurity Act 2014</i> (Qld) known to restrict the movement of Koala and/or degrade the quality of the Coastal Swamp Sclerophyll Forest TEC, Koala habitat and/or Grey-headed flying-fox foraging habitat, or its ability to regenerate.

Department of Climate Change, Energy, the Environment and Water request for additional information cross reference table

The below table details each of the Caloundra Transport Corridor Upgrade Project (EPBC 2024/09956) Offset Management Plan (OMP) request for additional information items and the section addressed within the OMP.

Cross reference table for the OMP request for additional information items and section addressed within OMP

Item	Request for additional information description	OMP section reference
2.1	A description of the Proposed offset site(s) including location, size, condition, existing and future tenure, and relevant ecological/species values present and surrounding land uses.	Section 3
2.2	Maps and shapefiles to clearly define the location and boundaries of the Proposed offset site/s, accompanied by the offset attributes (e.g., physical address of the Proposed offset site/s, coordinates of the boundary points in decimal degrees, the relevant MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares).	Section 2.1
2.3	Baseline survey information (matter habitat quality, baseline pest and weeds survey) showing MNES presence and the extent and quality of the respective habitat(s) at the Proposed offset site(s) in accordance with the relevant survey guidelines or using a scientifically robust and repeatable methodology.	Section 3.5
2.4	Summarised details of the nature of the conservation gain to be achieved for relevant MNES, including the creation, restoration and revegetation of habitat in the Proposed offset site/s.	Section 3.6.1
2.5	Information about how the Proposed offset site/s will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant MNES. This should include information about how the proposed offset/s area contributes to any state and/or regional plan/s for the conservation of the protected matter.	Section 3.4
2.6	Baseline survey information showing pest and weed presence at the Proposed offset site(s) in accordance with the relevant survey guidelines or using a scientifically robust and repeatable methodology.	Sections 3.6.2 and 3.6.3.
2.7	Mechanisms for protection, for at least the full duration of the impact, under a conservation covenant or otherwise accepted method, noting that protection mechanisms for permanent impacts should continue in perpetuity.	Section 2.3
2.8	Completion criteria and, if necessary, performance targets that evidence protection or improvement of EPBC Act listed communities, species and their habitat. For the purpose of the plan: <ul style="list-style-type: none"> a) completion criteria are longer term time-bound values, specified for measurable parameters, that if attained and maintained ensure the plan's environmental objectives are achieved; and For example: 'By Year 20, the approval holder must reduce non-native plant cover to within 5% of the benchmark value associated with each Regional Ecosystem.' b) performance targets are time-bound short and medium term targets, for management interventions and environmental condition, that are used to monitor, evaluate, review and improve the effectiveness of the plan to offset impacts. For example: 'By Year 10, the approval holder must reduce non-native plant cover to within 10% of the benchmark value associated with each Regional Ecosystem.' 	Section 0

Item	Request for additional information description	OMP section reference
2.9	<p>The plan includes management measures that will protect or improve EPBC Act listed threatened ecological communities and/or species and their habitat. Each management measure:</p> <ul style="list-style-type: none"> a) is specifically linked to the attribute of the protected matter for which the management measure applies; b) has timeframes for implementation; c) is described sufficiently to avoid ambiguity and to inform plan implementation; d) is related to attaining/maintaining completion criteria and/or performance targets; and e) is derived from recognised principles, practice, or guidelines, and is justified - technically, scientifically and legally (e.g. by recommendation in a national recovery plan) – as an effective and appropriate measure to attain and/or maintain the plan's completion criteria and/or performance targets. <p>Management activities must be targeted towards the needs of the protected matter that is offset, and must align with the recovery objectives for the species as identified in relevant National Recovery Plans or Conservation Advices.</p>	Section 5
2.10	<p>The plan identifies and manages uncertainty. To this end the plan specifies:</p> <ul style="list-style-type: none"> a) key data/information used to formulate the plan; b) the limitations and/or uncertainty associated with the use of that data/information; c) the risks that limitation and/or uncertainty represents for plan failure; and d) how limitations and/or uncertainty, and associated risks, are mitigated during plan implementation. For example, where a margin of safety is applied to management measures until uncertainty is reduced to an acceptable level or performance targets/completion criteria are attained/maintained. 	Sections 3, 8 and 9
2.11	<p>The plan assesses the risk of failure to achieve the plan's performance targets and/or completion criteria. To this end the plan:</p> <ul style="list-style-type: none"> a) states the plan's performance targets and/or completion criteria; b) identifies events or circumstances that prejudice attainment/maintenance of performance targets and/or completion criteria. The events or circumstances must address scientific/ecological uncertainty, stochastic events and legal/land use planning factors that may represent risks; c) includes a qualitative assessment of the likelihood and consequence of those events or circumstances, and the residual risk of failure to achieve those criteria due to identified events or circumstances (assuming management measures will be implemented); d) characterises risk as low, medium, high or severe, and derived from likelihood (highly likely, likely, possible, unlikely, rare) and consequence (minor, moderate, high, major and critical); and e) outlines how consequence, likelihood and risk level for each risk have been determined. 	Sections 4.1, 4.2 and 8

Item	Request for additional information description	OMP section reference
2.12	<p>The plan manages the risk of failure to achieve performance targets and/or completion criteria by:</p> <ul style="list-style-type: none"> a) specifying management measures that will be implemented to attain/maintain the completion criteria and/or performance targets; b) enhancing monitoring and management measures for high-risk events or circumstances, thereby providing a 'margin of safety' to detect, avoid or mitigate the likelihood and/or impacts of the event or circumstance; c) specifying measurable events or circumstances (management triggers) that detect actual or potential issues in a timely manner to avoid, minimise or mitigate adverse impacts; d) ensuring the monitoring program includes activities to detect management triggers, and explains how monitoring activities may inform the selection and implementation of corrective actions; e) specifying methods to be used to determine whether the management trigger is project attributable; f) specifying effective and appropriate corrective actions that may be implemented if a management trigger is realised; and g) monitoring the effectiveness of corrective actions and implementing appropriate responses in the event corrective actions are not effective. 	Sections 5, 6 and 10
2.13	<p>The plan describes the monitoring methods that will be implemented, and:</p> <ul style="list-style-type: none"> a) demonstrates the relevance of the monitoring methods to the protection of the relevant aspect of the protected matter(s) for which the offset is implemented; b) includes quantitative (e.g. on-ground survey results) and qualitative baseline data (e.g. photo-point monitoring sites) that establish the start quality/condition of the environment and which can be used to measure performance against; c) describes the sampling strategy (including monitoring area, site selection and sampling intensity over space and time) and statistical analyses to be employed; d) justifies the sampling strategy/monitoring methods, including through: <ul style="list-style-type: none"> e) an assessment of effectiveness and constraints to use; f) capacity to detect change in environmental condition due to management interventions; g) capacity to demonstrate attainment of performance targets and/or completion criteria; and h) the statistical power of the strategy/method. i) commits to engage appropriately qualified experts to design and conduct monitoring and survey activities, and analyse monitoring results; j) accounts for seasonal/climatic variability; and k) details the location, nature and number of monitoring sites, including benchmark/reference sites to evaluate management performance. 	Sections 6 and 10
2.14	<p>The plan includes commitments to report on plan implementation and success as well as opportunities for improvement. This is achieved by:</p> <ul style="list-style-type: none"> a) if the project is approved, identifying relevant reporting obligations under the EPBC Act approval, or otherwise proposing appropriate regular reporting intervals, objectives and methods; b) specifying how plan/strategy implementation will be reported in accordance with those obligations; c) including a reporting template specifying key risk management, management measures, monitoring and adaptive implementation outcomes for the reporting period; and d) including a schedule and triggers for reporting types (e.g. annual compliance, incident, non-compliance, contingency). 	Section 7

1 Introduction

1.1 Project background

The Sunshine Coast Council (SCC), in partnership with the Department of Transport and Main Roads (TMR), proposes to construct and operate a new integrated transport corridor in Caloundra, Queensland (Qld) referred to as the Caloundra Transport Corridor Upgrade Project (the 'Project').

On 1 August 2024, the Project was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and was declared a 'controlled action' (EPBC 2024/09956) on 30 October 2024.

Subsequently, on 14 November 2024, a request for additional information required for assessment by Preliminary Documentation was issued by DCCEEW under Section 95A(2) of the EPBC Act. Specifically, Section 6 (proposed offsets) of the request for additional information required the preparation of an Offset Proposal (OP) and Offset Management Plan (OMP) to inform DCCEEW's assessment of potential Project impacts to matters of national environmental significance (MNES). Further, Attachment B of the request for additional information provided specific requirements for both the OP and the OMP. This document (i.e. OMP) has been prepared in response to Section 6 and Attachment B of the request for additional information.

1.2 Findings of significant residual impacts on MNES

The Project EPBC Act Preliminary Documentation (PD) (Aurecon, 2025) identified three protected matters that are likely to be subject to significant residual impacts to which offsets are required, consisting of:

- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland Threatened Ecological Community (Coastal Swamp Sclerophyll Forest TEC)
- Koala habitat
- Grey-headed flying-fox (GHFF) habitat

It is noted that whilst the proposed offset site does provide for GHFF habitat, GHFF habitat has been formally excluded from the OP, following advice received from DCCEEW on 12 November 2025. Consequently, this document does not address any further offset requirements for the GHFF. The target MNES for this OP is the Coastal Swamp Sclerophyll Forest TEC and Koala habitat.

For the purpose of this OMP the above two protected matters (Coastal Swamp Sclerophyll Forest TEC and Koala habitat) are referred to as the 'target offset MNES'.

Table 1.1 summarises the significant residual impacts associated with proposed action and the minimum offset required for legislative compliance.

Table 1.1 Significant residual impacts associated with proposed action and the quantum of proposed offsets

MNES	Status	Habitat type impacted	Significant residual impact associated with proposed action (hectares (ha))	Proposed offset site area (ha)
Coastal Swamp Sclerophyll Forest TEC	Endangered	-	2.06	18.5
Koala habitat	Endangered	Foraging and breeding, shelter and dispersal	4.65	18.5

SCC is committed to providing direct offsets to compensate for the significant residual impacts associated with the proposed clearing of Coastal Swamp Sclerophyll Forest TEC and Koala habitat for the Project.

Offsets are required to achieve a conservation outcome that counterbalances any significant residual impact on a MNES from proposed Project works. Offsets must replicate the environmental values which are subject to loss, minimise the time between the impact and the delivery of the offset, and offer additional protection or management actions to improve the environmental values at risk (Department of Sustainability, Environment, Water, Population and Communities [DSEWPC], 2012).

1.3 Purpose of this document

The purpose of this document is to provide information to address the requirements and implementation of the Project OMP in accordance with the EPBC Act Environmental Offsets Policy (DSEWPC, 2012a).

The primary mechanisms to achieve delivery of the proposed offset include:

- The dedication of a proposed offset site of 18.5 ha of vegetation that is considered analogous to the Coastal Swamp Sclerophyll Forest TEC, which also provides habitat for the Koala.
- Rehabilitation and revegetation management activities to improve the condition of low and medium quality patches within the proposed offset site to achieve high quality condition, size and increased carrying capacity (net gain) for the target offset MNES
- Implementation of a management plan for the following categories to ensure the integrity of existing remnant vegetation is improved or maintained:
 - Increasing habitat values
 - Pest management
 - Weed management
 - Fire management
- Consistent monitoring and reporting to ensure that the proposed offset site is achieving and maintaining the completion criteria, including meeting the nominated interim milestone targets.

The implementation of these offset mechanisms will create a continuous conservation area of high-quality habitat for the ecological community.

2 Offset overview

This section provides an overview of the proposed offset details, including:

- Location, area, tenure and ownership of the proposed offset (refer Section 2.1)
- Roles and responsibilities for offset delivery (refer Section 2.2)
- Timing and offset protection mechanism (refer Section 2.3)
- Intent of environmental offset (refer Section 2.4).

2.1 Location, area, tenure and ownership of proposed offset

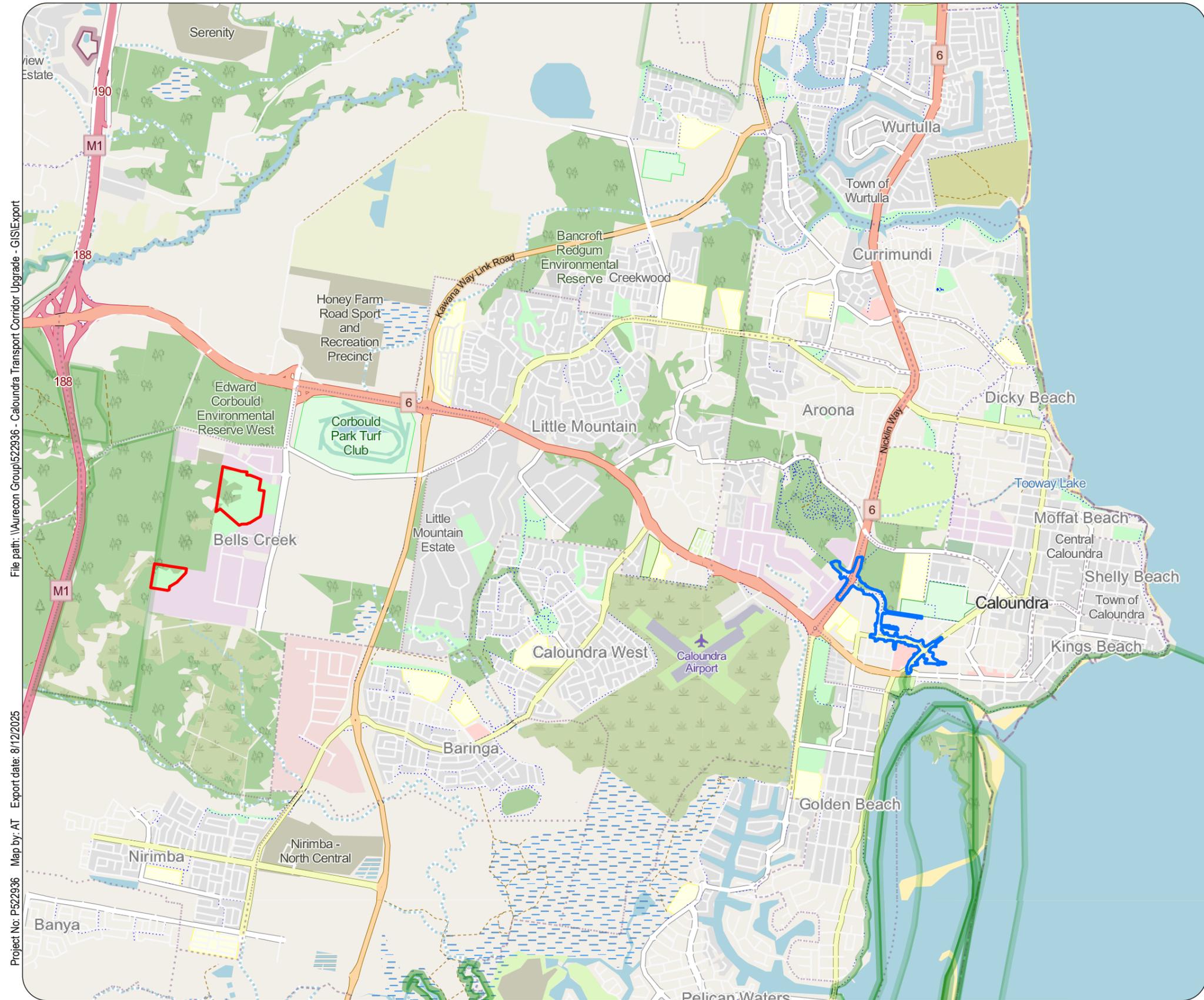
An assessment to determine suitable Project offset areas within the region was completed by Aurecon in 2024 and 2025. The assessment identified the proposed offset site (i.e. Lot 900 on SP209288) is located directly adjacent to the Bobbie Sattler Nature Refuge, within the Racecourse Road Environmental Reserve within the locality of Corbould Park, Queensland (refer Figure 2.1 and Figure 2.2). The proposed offset site is located approximately 6 kilometres (km) west of Caloundra and has been historically cleared as a result of previous land management activities.

The proposed offset property, which includes the entirety of the Racecourse Road Reserve, has an area of approximately 37.1 ha. The proposed offset site is located within the proposed offset property and has at least 18.5 ha. Shapefiles to clearly define the location and boundaries of the proposed offset site, accompanied by the offset attributes (e.g. physical address of the proposed offset site, coordinates of the boundary points in decimal degrees, the relevant MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares) will be sent as a separate attachment to this document.

The proposed offset site is located on land that is owned by the Queensland State Government (represented by the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) under control of SCC as Trustee. No current exploration permits, mining or petroleum leases occur over the proposed offset property.

An assessment to determine the suitability of the proposed offset site was conducted by Aurecon in 2024 and 2025. Vegetation within the proposed offset site mostly consists of unmapped regrowth considered to be analogous to the Coastal Swamp Sclerophyll Forest TEC. The presence of the Coastal Swamp Sclerophyll Forest TEC within the significant residual impact area forms the first requirement for proposed offsets. This protected matter is listed as Endangered under the EPBC Act and is identified within the Commonwealth conservation advice for the community as being analogous to Regional Ecosystem (RE) 12.3.4 as mapped by the Queensland Government. This community is known to provide foraging and shelter habitat for the Koala.

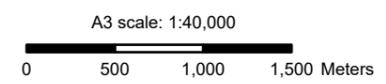
The assessment of the suitability of the proposed offset site identified that the necessary conditions (i.e. habitat types and area) occur to meet the Project offset obligations.



Legend
▭ Project disturbance footprint
▭ Proposed offset site

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Revision: A Date: 8/12/2025



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Figure 2.1: Proposed offset site locality map



Service layers: City of Moreton Bay, Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Data sources: Queensland Spatial Catalogue - 2023



Legend

— Road

▭ Proposed offset site

Revision: A

Date: 8/12/2025

A3 scale: 1:6,000



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Figure 2.2: Proposed offset site

2.2 Roles and responsibilities for offset delivery

The overarching responsibility for satisfying the requirements of this OMP belongs to SCC, who will engage the following specialist as required in accordance with this OMP:

- Suitably qualified person/s (SQP) to undertake baseline and monitoring surveys
- Suitably qualified and experienced bush regeneration contractors or restoration ecologists to undertake replanting and rehabilitation programs
- Licensed weed control – commercial operators to undertake weed management programs
- Licensed and suitably qualified pest management technicians to undertake pest control programs.

It will be the responsibility of these contractors to undertake their operations in accordance with this OMP.

The following OMP stakeholders are identified by their roles below.

- **SCRC – Approval Holder**
 - Natural Areas Offset Officer – offset delivery and overseeing on-ground works (e.g. site monitoring, management and reporting).
 - Senior Field Botanist – vegetation/habitat quality assessment and Modified Habitat Quality Assessment (MHQA).
- **SCRC offsets team/Contractor – Operational works**
 - Weed management activities, weed treatment, revegetation, assisted regeneration, fire management activities, pest animal management, monitoring and ecological surveys as directed by the Approval Holder.

It will be the responsibility of the Approval Holder to engage SQP to undertake the habitat quality assessments, ecological studies, Koala surveys/habitat assessments, prepare reports and undertake inspections, as required.

2.3 Timing and offset protection mechanism

Prior to the commencement of the action, a voluntary declaration (VDec) will be made and registered under section 19F of the *Vegetation Management Act 1999* (Qld) over the proposed offset site. A VDec is a legally binding protection mechanism that is registered in title and is binding on all current and future owners of the land. Once declared, a property map of assessable vegetation displaying the area as a Category A area will be made.

Within 20 business days of securing the VDec, SCC as trustee of the land will advise DCCEE in writing and provide legal security documentation.

Within 12 months of securing the VDec, SCC will establish a legally binding Environmental Statutory Covenant, securing the site for the life of the Project's EPBC Act Controlled Action Approval under the *Land Title Act 1994* (Qld).

Legal protection via the VDec and the Covenant will cover the extent of offset area within Lot 900 on SP209288.

Given SCC is the current landholder (trustee), there is no requirement to obtain consent from the State for the offset.

2.4 Intent of environmental offset

The overarching environmental outcome for the proposed offset site is to improve habitat quality of the Coastal Swamp Sclerophyll Forest TEC, as well as the Koala habitat. In accordance with the EPBC Act, the environmental outcomes to be achieved for the proposed offset site through the implementation of this OMP are:

- Improve habitat quality of the ecological community Coastal Swamp Sclerophyll Forest TEC across the proposed offset site
- Improve Koala habitat quality and carrying capacity across the proposed offset site
- Improve connectivity with adjacent habitat in the greater landscape
- Allow the area to be appropriately managed to reduce threatening processes
- Reduce the extent and cover of weeds, the occurrence of pests.

To have successfully restored the habitat in the proposed offset site, the interim milestones and management plan must result in a habitat quality of 1 point after 20 years. Therefore, for each matter this will result in an uplift in the habitat quality scores:

- Coastal Swamp Sclerophyll Forest TEC from 7 to an 8
- Koala habitat from 5 to a 6.

Active management will be undertaken within the proposed offset site targeted to the Coastal Swamp Sclerophyll Forest TEC and Koala habitat and designed to achieve offset outcomes that benefit the matters, beyond what would have been achieved without the offset. The proposed offset site provides offset opportunities to improve habitat through increased funding from the Project and targeted species-specific management, beyond that which could be provided by SCC conservation funding alone.

3 Proposed offset site description

This section provides a description of the proposed offset site, in relation to the following:

- General description (refer Section 3.1)
- Vegetation communities and flora species (refer Section 3.2)
- Habitat/vegetation suitability (refer Section 3.3)
- Connectivity (refer Section 3.4)
- Baseline condition (refer Section 3.5).

3.1 General description

Current environmental values present within the proposed offset site include alluvial systems, fine-grained sedimentary rocks and coarse-grained sedimentary rocks. Extensive areas of regrowth and non-remnant vegetation containing areas infested by weeds are also present. Weed infestations occur throughout the proposed offset site and pose a significant fire risk and impede the recruitment of native flora species. The protection and management (particular weed management) of the proposed offset site will increase and improve the quality of habitat, and carrying capacity for the target offset MNES.

3.2 Vegetation communities and flora species

The vegetation within the proposed offset site has historically been cleared and currently consists of unmapped high-value regrowth (refer Figure 3.1) analogous to RE 12.3.4 in terms of species diversity and abundance.

Extant onsite vegetation is analogous (in relation to species diversity and abundance) to the Coastal Swamp Sclerophyll Forest TEC and is dominated by Eucalypt/Melaleuca open forest and woodland and occurs on Quaternary alluvial systems. Typical canopy species include *Melaleuca quinquenervia*, *Melaleuca sieberi* and *Eucalyptus robusta*. Non-native flora species (e.g. *Setaria sphacelata* (South African Pidgeon Grass)) are well represented throughout much of the proposed offset site (refer Photograph 1). *Sphagneticola trilobata* (Singapore Daisy) was observed to occur on the peripheries of the southern section of the offset site. The TEC was represented by two Assessment Units, AU3 and AU4 (refer Figure 3.1), which consisted of two broad condition states of the same vegetation community.



Photograph 1 Representation of vegetation located at the proposed offset site

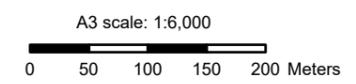
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- Legend**
- Road
 - Monitoring Sites
 - ▭ Proposed offset site
- Assessment Unit**
- ▭ AU3
 - ▭ AU4

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Figure 3.1: Ground truthed vegetation and assessment units

3.3 Habitat/vegetation suitability

The proposed offset site provides habitat for Coastal Swamp Sclerophyll Forest TEC as well as Koala. Habitat requirements for TEC and fauna species, derived from the Commonwealth conservation advice, is provided within Appendix B. The sections below indicate how the proposed offset site provides suitable habitat or is analogous to the Coastal Swamp Sclerophyll Forest TEC applicable to this OMP.

3.3.1 Coastal Swamp Sclerophyll Forest TEC

The key diagnostic characteristics and condition thresholds criteria outlined in the Coastal Swamp Sclerophyll Forest TEC (Department of Agriculture, Water and the Environment [DAWE], 2021) were used to confirm presence of the TEC within the proposed offset site. Assessment of offset site characteristics against the key diagnostic characteristics and condition thresholds for the Coastal Swamp Sclerophyll Forest TEC.

AU3 of the TEC consists of 4.83 ha in the northern section of the proposed offset area, and 3.72 ha in the southern section of the proposed offset area. AU4 of the TEC consists of 7.83 ha in the northern section of the proposed offset area and 2.15 ha in the southern section of the proposed offset area. A total of 18.5 ha (rounded) of the TEC was observed within the proposed offset area.

Condition classes and key diagnostic characteristics of the TEC within the offset site were assessed and addressed in Table 3.1. Figure 3.2 provides the location of the TEC patches and condition classes.

Table 3.1 Assessment of offset site characteristics against the key diagnostic characteristics and condition thresholds for the Coastal Swamp Sclerophyll Forest TEC

Key diagnostic characteristic	Assessment criteria description	Assessment of criteria characteristics within the disturbance footprint
Geographic location	<ul style="list-style-type: none"> Restricted to coastal catchments. Occurs on the mainland and islands near to the coast (within 20 km) from South East Queensland to south-eastern New South Wales (NSW) within Interim Biogeographic Regionalisation for Australia Bioregions South East Queensland (SEQ), NSW North Coast, Sydney Basin, South East Corner (Bateman subregion). 	Yes – Occurs in SEQ within 1 km of the coast.
Elevation	<ul style="list-style-type: none"> Typically below 20 m above sea level (ASL), occasionally up to 220 m ASL on hill slopes with perched swamps or high-water table. 	Yes – Area of interest is between 8 to 15 m ASL.
Soil type	<ul style="list-style-type: none"> Hydric soils that are waterlogged or intermittently inundated for 1 to 3 months per year (seasonally). Formed by unconsolidated alluvial, marine or aeolian sediments, stained black/dark grey by humus. Soil type aids but biological composition is primary for identification. 	Yes – Area of interest reflective of RE 12.3.4, which is landzone 3 (alluvium) and intermittently inundated.
Hydrology	<ul style="list-style-type: none"> Inundation patterns ranging from intermittent to episodic; natural hydrological regime intact or managed to maintain ecology. 	Yes – Natural hydrological regime appeared intact.
Vegetation structure	<ul style="list-style-type: none"> Varies from tall closed to open forest or woodland to dense shrubland; minimum crown cover at least 10%, typically 50-70%. 	Yes – Tall open forest. Cover ranges from 17-53%
Canopy dominance	<ul style="list-style-type: none"> From SEQ to Sydney Basin Bioregion: canopy dominated or co-dominated by <i>Melaleuca quinquenervia</i> and/or <i>Eucalyptus robusta</i>. Other Melaleucas may dominate locally (<i>M. dealbata</i>, <i>M. biconvexa</i>, <i>M. ericifolia</i>). 	Yes – Canopy dominated by <i>M. quinquenervia</i> .
Other canopy/ sub-canopy Species	<ul style="list-style-type: none"> May include species like <i>Casuarina glauca</i>, <i>Banksia</i> spp., <i>Callistemon salignus</i>, <i>Corymbia intermedia</i>, <i>E. tereticornis</i>, <i>E. longifolia</i>, <i>E. botryoides</i>, <i>Livistona australis</i>, <i>Lophostemon</i> spp. 	Yes – Some of these species are present but not dominant across a patch.

Key diagnostic characteristic	Assessment criteria description	Assessment of criteria characteristics within the disturbance footprint
Understorey composition	<ul style="list-style-type: none"> Typically diverse hydrophytic ground layer with tall sedges (e.g. <i>Gahnia</i> spp.), ferns, graminoids, herbs e.g. <i>Imperata cylindrica</i>. Halophytic species may be present near estuarine sites but should not dominate. 	Yes – Ground layer composition varies but contains <i>Gahnia</i> spp., ferns, graminoids and herbs.
Presence of halophytic species	<ul style="list-style-type: none"> Ecological community is not present if halophytic species dominate the ground layer such as <i>Apium prostratum</i>, <i>Atriplex cinerea</i>, <i>Chenopodium glaucum</i>, <i>Rhagodia candolleana</i>, <i>Samolus repens</i>. Halophytic dominance typically indicates estuarine or saltmarsh vegetation, not this forest type. 	No – Not dominant if present.
Condition class thresholds		
Patch size (thresholds)	<p>The smallest patch size identifiable is 0.25 ha; breaks up to 30 m between vegetated areas can be included as one patch. Breaks greater than 30 m indicate separate patches. Patch size in the decision-matrix is divided into:</p> <ul style="list-style-type: none"> Large: ≥ 5 ha Medium: ≥ 2 ha and < 5 ha Small–contiguous: ≥ 0.25 ha and < 2 ha and contiguous (within 30 m) to another ≥ 5 ha remnant Small–isolated: ≥ 0.5 ha and < 2 ha, but not contiguous to a ≥ 5 ha remnant. 	<p>Patch extends beyond the boundaries of the offset site into the neighbouring Bobbie Sattler Reserve. Patch is >40 ha in size. Patch size is considered to be large.</p>
Biotic thresholds	<p>Ground-layer non-native cover in the decision-matrix is divided into:</p> <ul style="list-style-type: none"> High condition: < 20 % non-native Good condition: 20 to 50 % non-native Moderate condition: 50 to 80 % non-native Low condition: > 80 % non-native. 	<ul style="list-style-type: none"> Approximately 1.07 ha of the patch had severe (75%) non-native species coverage, however still met the threshold for low condition – Class C2 (<80% non-native cover). 2.08 ha of the patch within the Offset site had a non-native cover between 50-80% of total ground layer vegetation cover, making this moderate condition – Class C1. 0.33 ha of the patch within the Offset site had a non-native cover between 20-50% of total ground layer vegetation cover, making this in good condition – Class B1. 14.62 ha of the remaining patch within the offset site was in “high condition” with less than 5% condition. Patch areas outside the offset (>20 ha) were observed to have low non-native cover and were in high condition – Class A

It was observed that no buffer existed between the existing development surrounding the proposed offset site, however the TEC patch intersecting the 100 m buffer zone of the edge of development still met the key diagnostic characteristics and the minimum condition threshold for the TEC as per the conservation advice.

Information regarding the Coastal Swamp Sclerophyll Forest TEC and how it is to be impacted within the Project disturbance footprint is detailed in the significant impact assessment provided as part of the Preliminary Documentation (Aurecon, 2025).

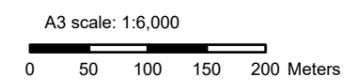
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- Legend**
- Road
 - Proposed offset site
- TEC condition**
- Class A
 - Class B1
 - Class C1
 - Class C2

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Figure 3.2: Location of the TEC patch and condition

3.3.2 Koala habitat

Koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species and their habitat can be broadly defined as any forest or woodland containing species that are known Koala food trees, or shrubland with emergent food trees. In addition, in coastal lowland areas of Queensland, Koalas are found in vegetation communities dominated by Melaleuca or Casuarina species (Youngentob et al., 2021).

As identified in Section 3.2 and shown in Figure 3.1, the majority of the proposed offset site contains vegetation dominated by both Eucalyptus and Melaleuca (i.e. Myrtaceous) species. Extant vegetation is considered analogous to the RE 12.3.4 as defined by the Queensland Regional Ecosystem Description Database (REDD), and the Coastal Swamp Sclerophyll Forest TEC in relation to species diversity and abundance (refer Section 3.2). Within Queensland, RE 12.3.4 has been identified by the State government as providing essential habitat for the Koala. It is therefore concluded that the proposed offset site provides suitable habitat for the Koala as it is consistent with the DCCEEW approved conservation advice for the species.

3.4 Connectivity

The placement of the proposed offset site is important in maintaining connectivity between habitats of non-remnant and remnant vegetation for areas considered analogous to the Coastal Swamp Sclerophyll Forest TEC (i.e. RE 12.3.4).

The proposed offset site provides medium ecological connectivity with ecological connectivity with remnant vegetation communities bounding the western edge of the area and partial connectivity to the east (refer Figure 2.2 and Figure 3.1).

The proposed offset site is contained within a State wide biodiversity corridor as defined under the Biodiversity Planning Assessment for South-east Queensland. The proposed offset site is a key connection point linking extant vegetation corridors that occur to the west of the site (i.e. Racecourse Rod Conservation Reserve, Bobbie Sattler Nature Reserve, Edward Cor Environmental Reserve West, Caloundra Conservation Park and Brannock's Environmental Reserve) and those that are located to the east (i.e. Pierce Avenue Bushland Reserve, Koala Court Park, Bells Reach Conservation Reserve and Lamerough Creek West Environment Reserve). The proposed offset site is contiguous with the remnant vegetation (including RE 12.3.4) located to the east and west and at the completion of the offset delivery, the proposed offset site would consolidate surrounding vegetation to provide enhanced fauna movement opportunities throughout the region, including consolidating a fauna movement corridor extending approximately 15 km in an east-west direction, linking Dularcha National Park in the west, to Lamerough Creek West Environment Reserve in the east.

Whilst it is noted that Racecourse Road presents a partial barrier for connectivity (i.e. pavement and hard surfaces that are raised above natural surface levels to reduce flooding), Racecourse Road is not bound by fauna or human exclusion fencing (e.g. cyclone fencing or barbed wire fencing). Therefore this road is not considered to constitute a major barrier to the movement of species that are known to cross cleared areas (i.e. Koala, macropods, birds and other mobile species).

3.5 Baseline survey methodology

The following sections outline the methodology used for conducting baseline surveys within the proposed offset site.

3.5.1 Baseline pest monitoring survey

Baseline monitoring for pest species was conducted through the strategic deployment of remote cameras at four sites within the proposed offset site. The cameras were active continuously from the 31st of October to the 25th of November 2025, capturing evidence to establish the presence and activity patterns of pest animals such as feral cats or foxes. The purpose of this surveillance was to establish a pre-disturbance baseline for pest animal populations, which will inform subsequent pest management strategies and allow for the quantitative assessment of control program efficacy.

3.5.2 Baseline weed assessment

A baseline weed assessment was carried out to identify and map weed species capable of resulting in competition or alterations to the habitat within the proposed offset site. This assessment involved systematically traversing the site to delineate and map infestations, establishing weed survey Points within representative areas, and assigning a Weed Severity score which utilised the defined classification system at each point:

- Major (>80%)
- High (50 to 80%)
- Moderate (20 to 80%)
- Low (5 to 20%)
- Very Low (<5%)

This severity scoring quantified the extent and impact of existing weed infestations, thus providing a foundation for future weed management prioritisation and the monitoring of control success.

3.5.3 Koala surveys

A targeted spotlighting survey was conducted specifically to detect the presence of Koalas (*Phascolarctos cinereus*) within the proposed offset site. This involved two 200 m surveys undertaken with a spotlight, searching for 10 metres per minute for a total time of 20 minutes per transect. During the survey, systematic searches of the canopy were conducted to inform species presence and approximate density.

SPOT assessment techniques were also undertaken to assess the level of koala activity/presence at the site. This involved undertaking three separate SPOT Assessment Technique (SAT) surveys, conducting a 1 m radial search around the base of one tree for two person minutes and repeating surveys for the nearest 29 trees.

3.5.4 Habitat quality

The unpublished MHQA methodology was chosen as the preferred and most thorough method of assessing habitat quality within the impact area and proposed offset site. MHQA adapts the methodology outlined in the Queensland *BioCondition Assessment Manual* (Version 2.2) (Eyre *et al.* 2015) and the *Guide to determining terrestrial habitat quality* (Version 1.2) (DEHP 2017). MHQA introduces an additional habitat factor, species stocking rate, in order to satisfy the requirements of EPBC Act Offset Policy Principles.

The method utilises benchmark scores to ensure assessments are measured to a known standard, repeatable and consistent in determining habitat quality. Two rounds of habitat quality assessments were conducted within the offset site by two suitably qualified ecologists in December 2024, and January/February 2025, and November 2025. Transect survey numbers were conducted in accordance with the guide to number of sampling sites relative to assessment unit size. Where discrete polygons were of the same quality

such as the very southern section of the proposed offset site, methods were followed as per Box 1 – streamlining field sampling sites of the *Guide to determining terrestrial habitat quality* (Version 1.2)

Habitat quality assessments were undertaken within the proposed offset site using the MHQA Tool. The methodology adopted for assessing habitat quality is detailed in the Preliminary Documentation (section 3.7.5 of the Preliminary Documentation) as well as Appendix C.

Appendix C provides the detailed methodology associated with the MHQA for the proposed offsite site, and Appendix D provides the results of the MHQA assessment for the proposed offsite site. **Error! Reference source not found.** shows the location of

3.6 Baseline condition

Field-based investigations have indicated that the habitat quality score for the proposed offset site is 5 out of 10 for Koala and 7 out of 10 for the Coastal Swamp Sclerophyll Forest TEC (refer Appendix C and Appendix D for methodologies and assessment outcomes related to the habitat quality scoring, respectively, and Section 3.6.1 for a summary of assessment outcomes).

Other factors that may impact on site condition such as weeds and pest animals (refer Sections 3.6.2 and 3.6.3, respectively) are also discussed in this section.

3.6.1 Habitat quality

Habitat quality assessments were undertaken within the proposed offset site using the MHQA Tool. The methodology adopted for assessing habitat quality is detailed in the Preliminary Documentation (section 3.7.5 of the Preliminary Documentation) as well as Appendix C.

Appendix C provides the methodology associated with the MHQA for the proposed offsite site, and Appendix D provides the results of the MHQA assessment for the proposed offsite site.

The Coastal Swamp Sclerophyll Forest TEC received a weighted habitat quality score of 6 (rounded) and Koala habitat received a score of 5 (rounded) at the proposed offset site. A summary of the target offset MNES habitat quality scores (Assessment Units (AUs) and total scores) are provided in Table 3.2. Where fauna habitat quality inputs differed from default methodology of the *Guide to determining terrestrial habitat quality* (Version 1.2) and MHQA, the scoring justification for Koala habitat are provided in Appendix E of the Offset Proposal.

Table 3.2 Weighted habitat quality scores for the target offset MNES within the proposed offset site

Habitat quality	Total score	Rounded score
Coastal Swamp Sclerophyll Forest TEC	7.15	7
Koala	5.20	5

3.6.2 Weeds

Historic flora surveys of the proposed offset site have been undertaken in 2013 (Shaw, 2013), with the following 26 non-native flora species identified:

- *Ageratum houstonianum* (Purple top)
- *Andropogon virginicus* (Whiskey Grass)
- *Aster subulatus* (Wild Aster)
- *Axonopus affinus* (Narrow-leaf Carpet Grass)
- *Axonopus compressus* (Broad-leaved Carpet Grass)
- *Baccharis halimifolia* (Groundsel Bush)
- *Bidens pilosa* (Cobbler's Pegs)
- *Lotononis bainesii* (Lotononis)
- *Ludwigia longifolia* (Long-leaf Willow Primrose)
- *Macroptilium atropurpureum* (Siratro)
- *Macroptilium lathyroides* (Phasey Bean)
- *Paspalum conjugatum* (Sour Grass)
- *Paspalum dilatatum* (Paspalum)
- *Paspalum mandiocanum* (Broad Leaf Paspalum)
- *Paspalum urvillei* (Vasey Grass)

- *Briza minor* (Lesser Quaking Grass)
- *Conyza canadensis* (Canadian Fleabane)
- *Desmodium uncinatum* (Silver-leaf Desmodium)
- *Emilia sonchifolia* (Emilia)
- *Euphorbia prostrata* (Red Caustic-Creeper)
- *Gamochaeta americanum* (Cudweed)
- *Pinus elliottii* (Slash Pine)
- *Setaria sphacelata* (South African pigeon grass)
- *Sida cordifolia* (Flannel Weed)
- *Solanum torvum* (Devil's Fig)
- *Urena lobata* (Urena Burr)

In addition to Shaw's (2013) flora surveys, weed surveys were incorporated into the habitat quality assessment conducted in 2024 and 2025 and a baseline weed assessment was conducted by Aurecon in November 2025. Weeds of National Significance (WoNs), restricted plants under the *Biosecurity Act 2014* (Qld) (Biosecurity Act) or locally significant invasive plants species identified by the Sunshine Coast Biosecurity Plan 2024 were identified within the proposed offset site, including:

- *Baccharis halimifolia* (Groundsel bush) – restricted under the Biosecurity Act
- *Senecio madagascariensis* (Fireweed) – restricted under the Biosecurity Act
- *Senna pendula* (Easter cassia) – listed as a locally significant invasive plant.

A baseline weed assessment identified the following weeds that may result in competition or alterations to habitat present within the proposed offset site:

- *Ageratum conyzoides* (Billygoat weed)
- *Ageratum houstonianum* (Blue billygoat weed)
- *Passiflora suberosa* (Corky passion flower)
- *Setaria sphacelata* var. *sericea* (South African pigeon grass).
- *Sphagneticola trilobata* (Singapore daisy) Restricted under the Biosecurity Act.

3.6.3 Pest animals

Dedicated targeted pest surveys were completed in November 2025 during the assessment phase for the proposed offset site. Baseline pest monitoring was carried out through remote camera deployment at four sites within the proposed offset site from 31st October to 25th November 2025. Camera traps recorded four separate fox sightings, three cane toad sightings and one black rat sighting. Camera trap locations are displayed in Figure 3.3. Combined with incidental observations, with the following species observed or derived from specimen-backed publicly available databases:

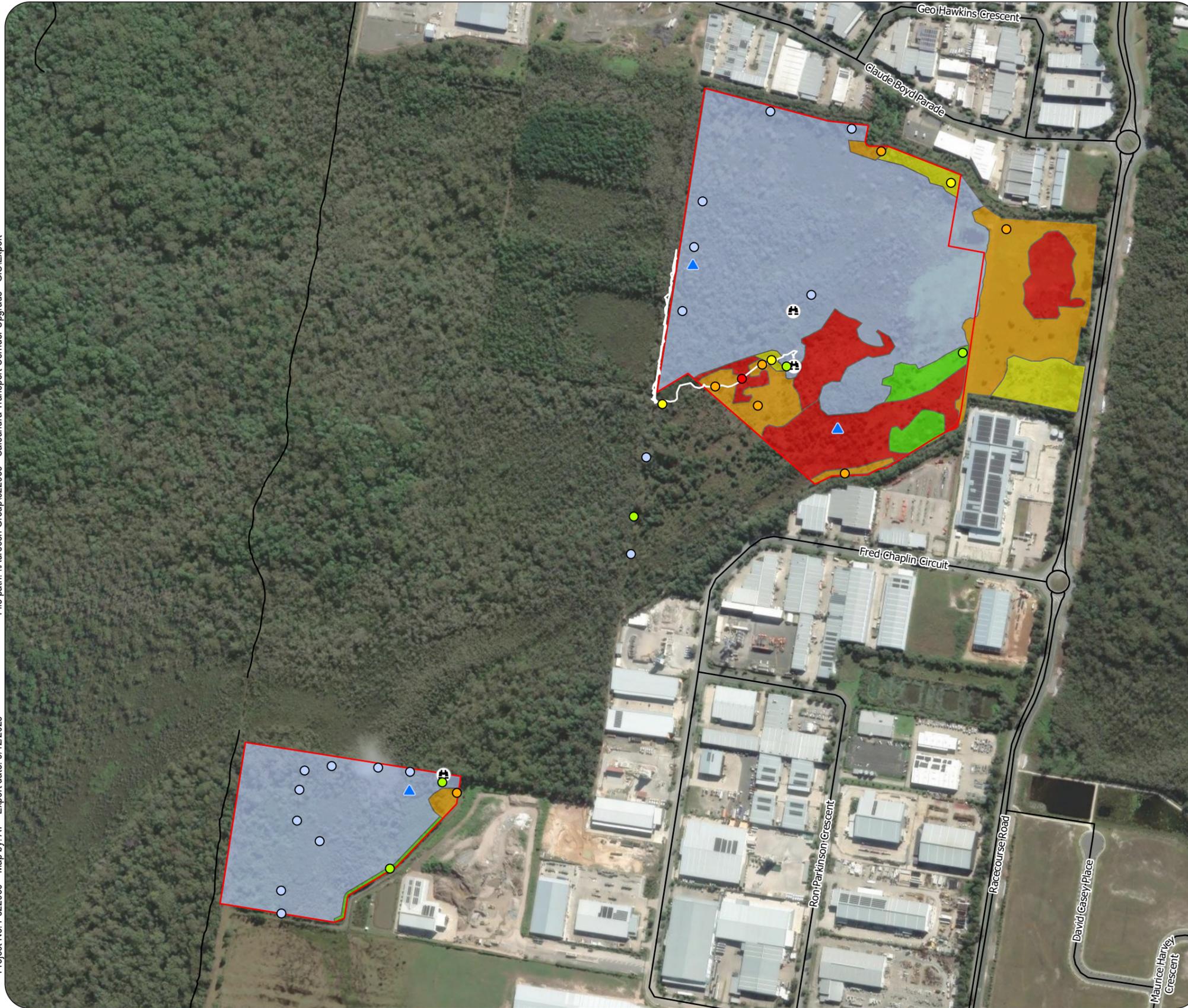
- Cane toad (*Rhinella marina*) – observed directly within the proposed offset site
- Dog (*Canis familiaris*) – likely present as either a wild dog or unrestrained domestic dog given the proposed offset site proximity to urban areas and WildNet records within 2 km of the proposed offset site. Wild dogs are listed as a Biosecurity Invasive animal as identified by Schedule 2 of the Biosecurity Act.
- Cat (*Felis catus*) – likely present as a wild cat or unrestrained domestic cat. Observed in 2015 in Bobbie Sattler Reserve Fauna surveys. Wild cats are listed as a Biosecurity Invasive animal as identified by Schedule 2 of the Biosecurity Act.
- European red fox (*Vulpes vulpes*) – observed directly within the proposed offset site. Foxes are listed as a Biosecurity Invasive animal as identified by Schedule 2 of the Biosecurity Act.
- Black rat (*Rattus rattus*) – observed directly within the proposed offset site.

3.6.4 Koala presence

Following SAT and spotlighting surveys (refer Section 3.3.2) conducted in November 2025, no Koalas or Koala scats were observed within the proposed offset site which is consistent to the impact site findings (Aurecon, 2025). Suitable Koala habitat was observed within the offset site as dispersal habitat, and whilst abundance of LIKT foraging trees was low (<5% cover), the site will have the potential to meet suitable

foraging habitat with the revegetation of eucalypt species. The weather conditions experienced during spotlighting were clear and 26 ° C

Project No: P522936 Map by: AT Export date: 9/12/2025 File path: \\Aurecon Group\622936 - Caloundra Transport Corridor Upgrade - GIS\Export



Service layers: City of Moreton Bay, Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Data sources: Queensland Spatial Catalogue - 2023



Legend

- Camera points
- SAT locations
- Road
- Spotlighting track
- Proposed offset site
- Weed severity points**
- High
- Major
- Moderate
- Low
- Very Low
- Weed severity**
- High
- Major
- Moderate
- Low
- Very Low

Revision: A

Date: 9/12/2025

A3 scale: 1:6,000



Caloundra Transport Corridor Upgrade

Figure 3.3: Baseline survey locations and weed extent

3.7 Condition of offset site without offsets

The current Offset Calculator (refer Appendix A) projects that without the offset, the future quality of the impacted ecological communities will decline. Specifically, in the case of South African pigeon grass (*Setaria sphacelata*), there is an anticipated increase in this invasive species at the offset site if it is not secured and treated with active management. In the chance there is an uncontrolled burn that goes through the offset site, due to the current height and fuel profiles of the canopy, in that event there is a high risk that damage could occur to the canopy height and cover values and set back recovery of the vegetation. As the management actions of the OMP provide mitigating actions against risk of bushfire and weed incursion, prevention of this scenario it has been taken into account in the future scenario without offset. Attributes likely to be impacted have been displayed in the MHQA summary scores in Appendix D.

4 Performance targets and completion criteria

Performance targets and completion criteria are essential components of planning and execution, providing clear objectives and benchmarks for success. Performance targets define what needs to be achieved, while completion criteria outline how to measure and assess whether the targets have been met. They ensure accountability, motivate individuals and teams, and facilitate effective resource allocation. This section provides the specific performance targets (refer Section 4.1) to assess the delivery of the OMP, and completion criteria (refer Section 4.2) to determine when the offset has been successfully delivered.

4.1 Performance targets

Five specific performance targets are proposed. These consist of the following:

- Habitat quality success indicators (refer Section 4.1.1)
- Rehabilitation and regeneration management (refer Section 4.1.2) – used to assess management actions identified in Section 5.1
- Pest animal management (refer Section 4.1.3) – used to assess management actions identified in Section 5.2
- Weed management (refer Section 0) – used to assess management actions identified in Section 5.3
- Fire management (refer Section 4.1.5) – used to assess management actions identified in Section 5.4.

Further information related to performance targets associated with each of the indicators and management actions is provided in the sections below.

4.1.1 Habitat quality success indicators

This OMP aims to achieve the proposed improvements in habitat quality within a 20-year timeframe. To evaluate conservation gains have been realised for each target offset MNES, comparison against the baseline condition (refer Section 3.6.1) will occur as specified within Sections 6 and 10.

Appendix E for the MHQA Offset Detailed scores provides performance targets for each transect for the 5, 10, 15 and 20 year timeframe, designed to measure the effectiveness of management actions in enhancing overall habitat quality attributes during the offset period. These targets also ensure that the final completion criteria for each target offset MNES is achieved within the specified timeframes. The baseline habitat quality scoring presented is the average total score of the assessment units for each species.

If compliance with the performance criteria is not achieved within the specified timeframes, the frequency of ongoing management efforts will be assessed by a qualified ecologist and be amended accordingly as part of the Project adaptive management plan (refer Section 8.2).

4.1.2 Rehabilitation and regeneration performance targets

Rehabilitation and regeneration at the proposed offset site are the key components that will result in an improvement in the baseline condition of the proposed offset site. To ensure success of the quality of habitat, the following performance targets must be achieved within the specified timeframes:

- Baseline mapping to identify rehabilitation and regeneration areas and the development of an in-depth restoration plan completed for the proposed offset site within the first 12 months of commencement
- Supplementary planting within the proposed offset site has been implemented where necessary so that after 5 years areas with a lack of canopy structure can be in-filled with foraging and shelter trees for the Koala habitat
- Evidence of natural recruitment of native species within disturbed areas during monitoring events specified in Section 6.1
- Native tree species diversity and abundance increases after 10 years

- Quality (refer Section 4.1.1) and availability of foraging habitat for the Koala is increased after 10 years
- Replanted (or naturally regenerating) areas do not require further direct maintenance (i.e. they are self-sustaining) and/or evidence of growth of naturally regenerating native species within disturbed areas after 5 years
- Areas allowed to regenerate will display signs of native vegetation regrowth at rates expected for the species within 5 years
- Habitat quality assessments using BioCondition are completed at years 5, 10, 15, and 20
- Habitat quality scores will not decrease in the reporting from the baseline data. If reduction occurs, adaptive management (refer Section 8.2) and corrective actions (refer Section 8.2) are to be implemented and monitoring will continue annually until values return to the baseline level
- Habitat value scores for the Koala will have improved by 1 or more points by the tenth year from commencement, in line with the interim milestones defined in Section 4.1.1. If habitat quality scores do not improve by 1 point, adaptive management (refer Section 8.2) and corrective actions (refer Section 9) are to be implemented and monitoring and management actions will continue annually until this value is reflected.
- Restoration efforts to be in line with the restoration strategy mapping listed in Figure 5.1.

4.1.3 Pest animal management performance targets

Pest animals degrade the habitat quality and are a threatening process to threatened species such as Koala. To ensure success of the OMP and to ensure that the carrying capacity of the proposed offset site is increases for species such as the Koala, the following pest animal management performance targets must be achieved within the specified timeframes:

- Annual updates to the pest animal control program based on the outcomes of the monitoring (refer to adaptive management in Section 8.2)
- Invasive animals (as identified by Schedule 2 of the Biosecurity Act) considered under current literature as having a direct impact on the MNES (Coastal Swamp Sclerophyll Forest TEC and Koala habitat) are managed throughout the life of the Offset Management Plan.

4.1.4 Weed management performance targets

To ensure success of the OMP and to ensure that the carrying capacity of the proposed offset site is increases for species such as the Koala, the following weed management performance targets must be achieved within the specified timeframes:

- Permanent monitoring photo points for future analysis of weeds identified as WoNS, restricted matters under the Biosecurity Act and locally significant species in Section 3.6.2 of this OMP is to be completed within six months of commencement of this OMP
- Initial treatment of weed species identified as WoNS, restricted matters under the Biosecurity Act and locally significant species in Section 3.6.2 of this OMP. Baseline mapping is to be completed within 12 months of commencement of this OMP
- Within 15 years, weed species identified as WoNS, restricted matters under the Biosecurity Act and locally significant species identified within Section 3.6.2, have been reduced by >70% from the baseline monitoring assessment
- Annual inspections and management to detect and treat weed species identified as WoNS, restricted matters under the Biosecurity Act and locally significant species identified within Section 3.6.2 until they are no longer observed in the proposed offset site.
- Where weed incursion of restricted weeds are coming from outside locations, infringement notices should be issued from SCC to landholders in order to manage restricted weeds as per general biosecurity obligations under the Biosecurity Act.

- Where mapped below good condition for the CSSF TEC, weeds should be targeted to ensure improvement of the condition class of the TEC. All TEC areas should be in High Condition after 20 years.

4.1.5 Fire management performance targets

To ensure success of the OMP and to ensure that the carrying capacity of the proposed offset site is increases for species such as the Koala, the following fire management performance targets must be achieved within the specified timeframes:

- Establish Fire Management Units/Zones to integrate with the SCC Digital Bushfire Management Plan within 12 months of commencement of the OMP
- Develop a prescribed burn plan prior to any prescribed burn
- Burn interval regimes are to consider ecological requirements in accordance with RE 12.3.4 fire management guidelines as defined in the Queensland REDD for the duration of the offset period.
- Fire management is administered through Council’s Planned Burn Program, in collaboration with other agencies when additional resources are required. The planned burn program is managed through the establishment of Fire Management Units (FMUs), FMU attributes determine the frequency, resourcing, social and ecological considerations, and operational requirements to achieve burn objectives.

4.2 Interim milestones

Interim milestones have been set to mark the progress of the management actions and assist towards achieving the offset completion criteria. The interim milestones are to be reviewed at five-yearly intervals (years 5, 10, 15 and 20) to manage and review expectations. The interim milestones are included in Table 4.1.

Table 4.1 Interim milestones

Year since commencement of the OMP	Milestone
1	<ul style="list-style-type: none"> ■ Commencement of initial pest control (for pest listed under Schedule 2 of the Biosecurity Act) ■ Commencement of initial weed control ■ Post pest control monitoring to commence ■ Establish Fire Management Units/Zones and their respective fire planning ■ Develop a prescribed burn plan
5	<ul style="list-style-type: none"> ■ Habitat quality of the proposed offset site, as determined by the habitat values monitoring and MHQA scoring, has been maintained at 5 or above out of 10 for 18.5 ha the Koala habitat and 7 out 10 for the Coastal Swamp Sclerophyll Forest TEC. ■ WoNS and locally significant weeds within the proposed offset site have been reduced by >30% from the baseline monitoring assessment ■ If pest animals are identified in annual monitoring management actions and frequency of the management actions will be increased until the pest animal levels are below baseline levels
10	<ul style="list-style-type: none"> ■ Habitat quality of the proposed offset site, as determined by the habitat values monitoring and MHQA scoring, has improved 5.5 or above out of 10 for 18.5 ha for the Koala habitat and 7.5 out 10 for the Coastal Swamp Sclerophyll Forest TEC. ■ WoNS and locally significant weeds within the proposed offset site have been reduced by >50% from the baseline monitoring assessment ■ If pest animals are identified in annual monitoring management actions and frequency of the management actions will be increased until the pest animal levels are below baseline levels

Year since commencement of the OMP	Milestone
15	<ul style="list-style-type: none"> ■ Habitat quality of the proposed offset site, as determined by the habitat values monitoring and MHQA scoring, has been maintained at 5.5 out of 10 or above for the Koala habitat and 7.5 or above out of 10 for the proposed offset site for the Coastal Swamp Sclerophyll Forest TEC. ■ WoNS and locally significant weeds within the proposed offset site have been reduced by >70% from the baseline monitoring assessment ■ Detection of pest animals in annual monitoring has declined by >70% of baseline values, or no pest animals have been recorded in the monitoring period for a period of two or more years
20	<ul style="list-style-type: none"> ■ Habitat quality of the proposed offset site, as determined by the habitat values monitoring and MHQA scoring, has improved to 6 out of 10 for Koala habitat and 8 out of 10 for the Coastal Swamp Sclerophyll Forest TEC ■ Locally significant weeds within the proposed offset site have been reduced by >90% from the baseline monitoring assessment ■ WoNS do not exceed densities of over 1% within the proposed offset site ■ Biosecurity Invasive animal as identified by Schedule 2 of the Biosecurity Act are not detected within the proposed offset site for a period of two or more years

4.3 Completion criteria

The delivery of the proposed offset, will be determined as successful when it completes all four of the following completion criteria:

- Habitat value scores within the proposed offset site will have improved by 1 or more points for the proposed offset site dedicated to Koala habitat and 1 or more points for the TEC by the twentieth year from commencement to result in a high-quality habitat of Coastal Swamp Sclerophyll Forest TEC (refer 'final completion score' in Table 4.1), or where an adaptive management action has successfully compensated the deficit of the habitat value score in consultation with DCCEEW
- Locally significant weeds within the proposed offset site have been reduced by >90% when assessed against the initial weed assessment undertaken within 6 months from the implementation of the OMP
- WoNS within the proposed offset site do not exceed densities over 1% when assessed against the initial weed assessment undertaken within 6 months from the implementation of the OMP
- Pest animals (as identified by Schedule 2 of the Biosecurity Act) are not detected within the proposed offset site for no less than period of 2 years (defined as low levels). This must be maintained for no less than 2 years.

5 Management actions

This section outlines the management actions required to meet the identified environmental outcomes of the proposed offset site. The management actions contained within this section have been developed to achieve the performance targets identified in Section 4.1, primarily to improve the overall habitat quality and condition for the Coastal Swamp Sclerophyll Forest TEC and habitat for the Koala. Additionally, the management actions are expected to also enhance the condition and quality of a wide range of biodiversity, including other EPBC Act listed threatened species.

The management actions described below, are regarded as appropriate for the proposed offset site and the two target offset MNES. The actions are designed to be measurable and monitorable, and they prioritise efficiency effectiveness, timeliness, and transparency. Additionally, management actions align with guidance outlined in the priority conservation and research actions from the conservation advice for the Coastal Swamp Sclerophyll Forest TEC (DAWE, 2021a), which will also result in habitat quality uplifts as well as the protection and restoration of habitat for the Koala.

The Conservation Advice for the Coastal Swamp Sclerophyll Forest TEC (DCCEEW 2021a) identifies priority conservation and research actions under the following approaches:

- Identify and map remnant and other occurrences of the ecological community that meet the description and the condition thresholds. Where regeneration occurs, provide measures that will support the regeneration to maturity (e.g. provide fencing to minimise grazing/trampling damage risk). Implement programs to manage invasive fauna, including domestic species.
- Maintain and reinstate appropriate hydrological regimes for the ecological community and the landscapes surrounding the ecological community – avoid disturbances to hydrology that will impact on ecological community
- Undertake surveys to locate and map remnant and other occurrences of the ecological community, as well as threatened species that occur in the ecological community
- Design and implement a monitoring program or, if appropriate, support and enhance existing programs for the ecological community and associated threatened species
- Further develop sustainable management guidelines and technical material to assist landowners, including measures to address inappropriate fertiliser application, stock management, ecological fire management and spray drift
- Develop effective control methods for the most damaging weed species that infest the ecological community, for example madeira vine (*Anredera cordifolia*), cats claw creeper (*Dolichandra unguis-cati*), morning glory (*Ipomoea* spp.), wandering jew (*Tradescantia fluminensis*), climbing asparagus (*Asparagus plumosus*), ochra (*Ochna serrulata*) and small-leaved privet (*Ligustrum sinense*)
- Investigate the importance of landscape scale geneflow and its implications for management of remnants, associated fauna, plant and animal interactions and longer-term ecological function. This includes research into optimal distances between remnants and remnant sizes that are crucial for a range of flora and fauna movements.
- Undertake research, monitoring and evaluation to determine the relative biodiversity, conservation benefits of remnants, areas of regeneration and supplementary planting
- Assess the vulnerability of the ecological community to climate change
- Investigate the likely impacts of nearby eucalypt plantations on groundwater and fire potential of the ecological community
- Undertake analysis of cost effectiveness of landscape connectivity and the importance of small isolates.

Sections 5.1 to 5.4 provide specific management actions and Section 10 provides a summary table of implementation and monitoring activities and schedule.

5.1 Management Action 1: Rehabilitation and regeneration management

Rehabilitation and regeneration at the proposed offset site is the key contributing action that will improve the existing vegetation of Coastal Swamp Sclerophyll Forest TEC as well as Koala habitat. The rehabilitation and regeneration process involves the reinstatement of relevant ecological value to degraded areas and/or exposed areas as a result of any additional management action, for instance, weed removal.

MHQA assessment of the proposed offset site has identified remnant and regrowth patches of Coastal Swamp Sclerophyll Forest TEC. These patches, together with degraded and weed-affected areas, represent prime opportunities for rehabilitation through natural regeneration and targeted infill planting aimed at enhancing habitat quality and connectivity for Koalas and the Coastal Swamp Sclerophyll Forest TEC. Spatial mapping (refer Figure 5.1) details the locations prioritised for revegetation activities. This mapping identifies three separate zones for restoration priority and focus for conservation benefit/uplift:

- **General weed maintenance** – to promote assisted regeneration and act as a buffer from any potential weed incursion (refer Section 5.3)
- **General in-fill planting** – replenishing gaps in canopy and enhancing native species diversity, focusing on the species list in Table 5.1 to enhance in particular attributes for the Koala quality and availability of foraging and shelter habitat.

Habitat for Koala within the proposed offset site will focus on vegetation recovery, which will facilitate the successful promotion of native regrowth and recruitment of eucalypts. The two approaches below are identified as a priority to act against habitat loss, disturbance and modification for the Koala, as specified in the approved conservation advice for Koala (DAWE, 2022a).

- Regeneration of existing remnant and regrowth vegetation
- Creation of habitat via infill plantings to assist with canopy closure (note: increased canopy cover is an indicator of the development of an intact eucalypt forest, providing improved habitat conditions for the Koala).

Restoration, through assisted natural regeneration by controlling non-native species (refer Section 5.3), is the preferred method in comparison to rehabilitation through reconstruction (e.g. replanting programs).

The use of weed and pest control will be considered prior to reconstruction (refer Section 5.3). Maintaining and eradicating legacy infestations and preventing new weed incursions is a key driver of habitat quality uplifts.

Replanting will be implemented to facilitate recovery of canopy gaps. Table 5.1 contains a list of potential tree species to be used for in-fill planting, selection priority should be given to Koala foraging and shelter trees. Tree species selection has been derived from those species that are known to occur within the Coastal Swamp Sclerophyll Forest TEC and its analogues (i.e. RE 12.3.4 and RE 12.3.4a) which are known to occur within proximity of the proposed offset site.

Reducing weed cover will enable unrestricted movements for species like Koala, this will be facilitated by controlling species like South African pigeon grass and increase native grasses and litter cover. Where young whipstick *Melaleuca* dominate and are in greater densities than three trees per square meter, they can be manually thinned to allow unrestricted access for Koalas and less *Melaleuca* intraspecific competition.

Infill species list and stem numbers/density will be informed by the ecological restoration technical specification which will be formulated within six months of the implementation of the OMP.

Table 5.1 Potential species for general in-fill planting

Tree species	
#Black She-oak (<i>Allocasuarina littoralis</i>)	Large-leaved Cheese Tree (<i>Glochidion sumatranum</i>)
Blueberry Ash (<i>Elaeocarpus reticulatus</i>)	#^Paper-barked tea-tree (<i>Melaleuca quinquenervia</i>)
Dwarf Banksia (<i>Banksia oblongifolia</i>)	^Small-leaved Paperbark (<i>Melaleuca sieberi</i>)
**Forest Red Gum (<i>Eucalyptus tereticornis</i>)	#Swamp Box (<i>Lophostemon suaveolens</i>)

Tree species	
*#Swamp Mahogany (<i>Eucalyptus robusta</i>)	Snow-in-Summer (<i>Melaleuca linariifolia</i>)
*#Tumbledown Gum (<i>Eucalyptus bancroftii</i>)	
Understory / shrubs	
Blue Tongue (<i>Melastoma malabathricum</i>)	Wallum Geebung (<i>Persoonia virgata</i>)
Flaky-barked Tea-tree (<i>Leptospermum trinervium</i>)	Wallum Hakea (<i>Hakea actites</i>)
Grass Tree (<i>Xanthorrhoea fulva</i>)	Wallum Bottlebrush (<i>Melaleuca pachyphyllus</i>)
Swamp Banksia (<i>Banksia robur</i>)	

Table notes:

- * Preferred species for Koala foraging/breeding
- # Preferred species for Koala shelter

Restoration actions will be based on the best available knowledge and scientific research to maximise positive biodiversity outcomes, and to be undertaken by a suitably qualified revegetation contractor and will include measures to ensure the maintenance and survival of plantings in the proposed offset site. The *National Standards for the Practice of Ecological Restoration in Australia* (Standards Reference Group Society for Ecological Restoration Australasia, 2021) and *South East Queensland Ecological Restoration Framework* (Chenoweth EPLA and BRS, 2012) will be used to guide restoration activities in a logical, ethical and systematic way to guide successful ecological restoration.

Managements actions for rehabilitation and regeneration are provided in Table 5.2.

Table 5.2 Management actions – Rehabilitation and regeneration

Management actions	Timing	Activity provider
<ul style="list-style-type: none"> ■ Baseline mapping to identify rehabilitation and regeneration areas and the development of a technical specification to guide on-ground actions. The technical specification will contain annual key performance indicators which align to the objectives of this OMP, against which the management actions will be assessed and reported against. 	<ul style="list-style-type: none"> ■ To be completed within the first 12 months of OMP commencement. 	<p>SCC offset team or suitably qualified bush regeneration contractor.</p>
<ul style="list-style-type: none"> ■ Encouragement of natural regeneration through weed management (refer Section 5.3) in patches of poor to moderate habitat quality and implement restoration activities (i.e. infill planting) to achieve high habitat quality. This is inclusive of restoring degraded patches of the ecological community to meet the minimum condition thresholds of the TEC (refer Coastal Swamp Sclerophyll Forest conservation advice (DAWE, 2021a)). ■ Where restoration activities are implemented, or where damage to naturally recruiting trees is observed, measures that will protect and support the regeneration to maturity (e.g. provide tree guards to minimise grazing or trampling damage risk) will be provided. ■ Infill planting where canopy cover is below 10% – prioritising foraging and shelter species for Koala. ■ Regeneration and restoration actions will consider the impact of periodic inundation on the activities to be undertaken in such areas, and their likely effectiveness, as well as the timing of such activities. ■ Stags, logs and mature and old-growth trees with hollows will be maintained within the proposed offset site to provide important habitat for fauna. ■ Manual thinning of dense Melaleuca stands to increase DBH values where density exceeds five trees per square metre. 	<ul style="list-style-type: none"> ■ All rehabilitation activities are to commence within 12 months of OMP commencement. ■ Infill planting will be implemented no later than 2 years from OMP commencement where natural regeneration is not successful or in areas identified as necessary in the technical specification. 	<p>SCC offset team or suitably qualified bush regeneration contractor.</p>

Project No: P522936 Map by: AT Export date: 9/12/2025 File path: \\Aurecon Group\522936 - Caloundra Transport Corridor Upgrade - GIS\Export



Service layers: City of Moreton Bay, Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Data sources: Queensland Spatial Catalogue - 2023



Legend

- Road
- Proposed offset site
- Restoration management zones**
- General infill planting
- Eucalypt infill planting
- General weed maintenance
- Targeted weed management

Revision: A

Date: 9/12/2025

A3 scale: 1:6,000



Caloundra Transport Corridor Upgrade

Figure 5.1: Offset restoration strategy

5.2 Management Action 2: Pest animal management

Pest animals such as dogs have been identified as a threatening process for many species, including the Koala, and the actions of pest species are known to result in the degradation of habitat. Pest animals are considered a key threatening process and have the potential to further disrupt Koala population movements and the availability of critical foraging resources. The control of pests is a fundamental measure to protecting and restoring existing ecological values, improving biodiversity, and improving ecological condition of the habitat within the proposed offset site.

Pest animal abundance fluctuates spatially and temporally in response to changing environmental conditions and resource availability. This requires pest control to be closely tied with ongoing monitoring, before and after active control. As such, pest monitoring and management will be undertaken on an annual (yearly) basis, including:

- Pest control
- Annual pre-control monitoring/assessment
- Additional control (if required).

Results of baseline assessment and incidental observations will be used to determine the baseline pest relative activity level, which will be used by a specialist pest control professional, to determine the extent of pest control response required to reduce and/or maintain the annual relative activity. Relative activity will be based on the following classes for each species should be determined by a suitably qualified fauna expert prior to commencement.

Pest animal control is to be conducted as close as possible (i.e. within 12 months) after the commencement of the OMP, with the extent and duration determined by the SCC, based on baseline assessment results. While pest control efforts will be guided by pest abundance. All control measures for pest animal species will be undertaken in accordance with guidance provided by the Centre for Invasive Species Solutions, the Biosecurity Act and the *Animal Care and Protection Act 2001* (Qld), Sunshine Coast Biosecurity Plan 2024, and SCC Feral Animal Prevention and Control Program.

Annual pest control will be determined by the outcome of the annual monitoring event.

Post-control monitoring will commence within 1 month of pest control being completed and occur at the same fixed locations surveyed during pre-control monitoring. Results of post-control monitoring will be used to determine the annual post-control pest relative activity level and determine whether additional follow up control and monitoring is required.

Management objectives, actions, timing and responsible parties for pest fauna management strategy across the proposed offset site are summarised in Table 5.3.

Table 5.3 Management actions – Pest management

Management actions	Timing	Activity provider
<ul style="list-style-type: none"> ■ Initial pest control as defined within the technical specification. 	<ul style="list-style-type: none"> ■ Within 12 months after the commencement of the OMP. 	SCC offset team or suitably qualified and/or licenced pest specialist.
<ul style="list-style-type: none"> ■ Ongoing pest control as defined within the technical specification. 	<ul style="list-style-type: none"> ■ Completed annually where in instances where defined thresholds are exceeded (refer Section 4.1.3), assessed through monitoring activities (refer Section 6.3). 	SCC offset team or suitably qualified and/or licenced pest specialist.

5.3 Management Action 3: Weed management

Weed management is a critical component in optimising the ecological integrity and functionality of habitats within the proposed offset site. Surrounding patches of urban and industrial land use and clearing have led to the introduction and encroachment of a variety of environmental weeds from edge effects. A reduction in non-native plant species facilitates the re-establishment of native species richness, and the recruitment of native foraging canopy species. This process will increase the accessibility and availability of resources, such as food and shelter, critical for the survival of the Koala, as detailed in the national recovery plan for Koala (DAWE, 2022b). The application of an integrated weed management strategy, which consolidate biological, cultural, mechanical, fire and chemical control methods, will have demonstrated efficacy in achieving these ecological goals.

South African pigeon grass (*Setaria sphacelata* var. *sericea*), in particular, increases biomass not only smothering out native species but creating a ladder effect into shrub and canopy species during fires, effectively irrevocably altering the ecosystem structure. Thus, targeted control of South African pigeon grass and other invasive plant species is essential for improving food and shelter availability for the target offset MNES. Additionally, dense grass may obstruct movement for Koalas, thereby impeding their access to suitable habitat and increasing predation risk. Weed coverage can also affect the Coastal Swamp Sclerophyll Forest TEC, with elevated levels causing the reduction of key diagnostic characteristics and condition thresholds. *Baccharis halimifolia* (Groundsel bush) has also been listed as one of the key weed threats in the Coastal Swamp Sclerophyll Forest TEC conservation advice (DAWE, 2021a) which is known to occur at the proposed offset site (refer Section 3.6.2). Table 5.4 details the actions required for effective weed management.

Table 5.4 Management actions – Weed management

Management strategy	Management action	Timing	Activity provider
Weed prevention	<ul style="list-style-type: none"> All vehicles and machinery entering the proposed offset site must be inspected for weeds and seeds prior to entry and cleaned down if required. Persons inspecting vehicles for weeds and seeds are trained in a recognised unit of competency. Ensure all imported topsoil and mulches are weed free and undertake regular weed hygiene inspections for all machinery entering the site to prevent introduction of new weed infestations. Material transportation will be restricted to nominated vehicle access tracks and maintain vehicles as per the Qld Vehicle and machinery cleanup procedures 	<ul style="list-style-type: none"> At all times. 	SCC offset team or suitably qualified and licenced bush regenerator.
Weed control	<ul style="list-style-type: none"> Management scheduling and techniques will be licensed weed control (commercial operator) person/ practitioner in accordance State and local guidelines. Scheduling will be determined based on required effort to reach interim and completion targets. 	<ul style="list-style-type: none"> Monthly during years 1-5, followed by every 2 months for years 6-20. However, a suitably qualified professional may recommend more frequent interventions as necessary. 	SCC offset team or suitably qualified and licenced bush regenerator.

5.4 Management Action 4: Fire management

The objective of the fire management action within proposed offset site is to safeguard and enhance biodiversity values through strategies such as fuel reduction and planned burning. This management action has been developed to align with offset objectives and support the habitat requirements of the target offset MNES.

The strategy considers several factors, including:

- Commonwealth approved conservation advice for the Coast Swamp Sclerophyll Forest TEC and the Koala
- Regional ecosystem classifications, particularly for RE 12.3.4 and RE 12.3.4a which are considered analogous to the Coast Swamp Sclerophyll Forest TEC
- Planned Burn Guidelines specifically for the South-east Queensland bioregion (Department of Environment and Science, 2022b)
- Prescribed burning regimes
- Adjacent land uses
- The SCC operational fire management and historical fire patterns in the area.

The primary focus of fire management planning is to reduce threats associated with unplanned fires while simultaneously enhancing habitat quality for target offset MNES. The anticipated benefits of effective fire management for target offset MNES include:

- Protection and enhancement of biodiversity values through the implementation of appropriate fire regimes
- Improvement of habitat quality
- Reduction of risks associated with uncontrolled fires, thereby promoting ecological resilience.

The fire management guidelines for RE 12.3.4 (*Melaleuca quinquenervia*, *Eucalyptus robusta* woodland on coastal alluvium) prescribe planned and unplanned burn intervals between 6 to 20 years for mixed grass/shrub, with a 25 to 70% burn mosaic. Historical fire scar mapping indicates that large scale burns occurred in 2015 and 2017. Several smaller burns occurred throughout the 2000s, primarily in the northern section of the lot. Consequently, the habitat in the proposed offset site is classified as 'within interval', indicating that it has experienced an adequate frequency of burns. However, this classification does not imply that burning should be avoided during the life of the offset. In fact, prescribed burns may be conducted as frequently as every 6 years, noting that more frequent fire regimes and intensity may kill *Melaleuca* species (DCCEEW 2021).

Additionally, the intent of the fire management actions is to achieve a mosaic patchwork burn over the length of the offset to support the following for the target offset MNES:

- Achieving an understory that allow easy accessibility to improve Koala movement
- Prevent high intensity canopy fires, likely to destroy target offset MNES habitat
- Promote seedling recruitment of canopy species and other fire obligate species.

Fire management planning will assess fire related risks and determine appropriate actions and timing to be implemented to benefit the target offset MNES. This will include the implementation of a structured risk assessment and industry best practice risk mitigation activities (AS ISO 31000), including preparation and operational aspects of hazard reduction burns as per SCC standards to effectively manage the proposed offset site.

Fire Management Units/Zones should be established to delineate areas for mosaic burning planning purposes.

Table 5.5 Proposed offset site management actions – Fire management

Management actions	Timing	Activity provider
<ul style="list-style-type: none"> ■ Establish Fire Management Units/Zones to integrate with SCC Digital Bushfire Management Plan 	<ul style="list-style-type: none"> ■ Within 12 months of commencement of the OMP 	SCC offset team or suitably qualified fire ecologist/practitioner
<ul style="list-style-type: none"> ■ Update Digital Bushfire Management Plan 	<ul style="list-style-type: none"> ■ Every 6 years throughout the life of the offset 	SCC offset team or suitably qualified fire ecologist/practitioner

Management actions	Timing	Activity provider
<ul style="list-style-type: none"> Develop a prescribed burn plan prior to all prescribed burns, developed and implemented by a suitably qualified fire ecologist. All prescribed burn plans must be developed in accordance with this OMP and the regional ecosystem fire management guidelines. 	<ul style="list-style-type: none"> Prior to any prescribed burns 	SCC offset team or suitably qualified fire ecologist/practitioner
<ul style="list-style-type: none"> Conduct planned burns as prescribed by the prescribed burn plan. This action may be optional, particularly if unplanned burns have occurred. 	<ul style="list-style-type: none"> As guided by the Prescribed Burn Plan and Fire Management Plan 	SCC offset team or suitably qualified fire ecologist/practitioner
<ul style="list-style-type: none"> Monitor canopy structure and health post burns to assess any potential damage. Any damage to trigger a corrective action to restore as per management action 1 – habitat management 	<ul style="list-style-type: none"> Within 2-4 weeks post prescribed or unplanned burns 	SCC offset team or suitably qualified fire ecologist/practitioner

5.5 Management Action 5: Flood management

Following significant rainfall events defined as exceeding 100 mm over a 24-hour period, the offset site will undergo a specific flood management response to address potential damage to planted vegetation. Follow-up inspections must be conducted at least one month after such an event to allow floodwaters to recede and reveal the full extent of the impact. During these inspections, the primary action will be the reestablishment of any planting mortalities caused by the flooding. Additionally, debris (such as sediment, litter, or large organic matter) that has been deposited and poses a risk of smothering or damaging surviving plants must be carefully removed from the vegetation (but not taken away from the offset site). Post-replanting, monitoring will be implemented as per the general monitoring actions (refer Table 6.1) to determine the success and survival rate of the replaced plants and ensure the site progresses towards completion criteria.

5.6 Management Action 6: Public access

Public access tracks exist around the perimeter of the broader reserve although it is limited to pedestrian access. There is no formal pathway/access track through the offset site. Due to the density of surrounding vegetation and swampy nature of portions of the reserve, off-track access into the offset site itself is considered to be rare.

Signage restricting off-leash dog access is to be installed in the proposed offset site. The signage must incorporate a design that is highly visible, durable, and uses clear, concise language and universally recognised pictograms. Signage at the entry points for the reserve must clearly state: **"All Dogs Must Be Kept On a Leash – Fine Applies for Dogs off leash"**.

Additionally, signage should be placed along the existing tracks to remind the public to keep out of the offset vegetation to avoid trampling or damage. Periodically signage along the tracks must clearly state: **"Environmental protection area, please keep out"**.

6 Monitoring actions

A monitoring and evaluation plan has been developed as part of this OMP, to assess the success of the management actions to maintain and improve the extent and habitat values for the target offset MNES applicable to this OMP. Monitoring results, as well as the interim milestones (refer Section 4.2), will be used to track the progress of the offset delivery and identify if corrective actions (refer Section 9) and/or adaptive management measures are to be implemented (refer Section 8.2).

The monitoring and evaluation 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 Coastal Swamp Sclerophyll Forest TEC and Koala habitat quality, and successful control of pest and weed species within the proposed offset site.

Four monitoring sites have been established for the Coastal Swamp Sclerophyll Forest TEC and Koala habitat (refer Figure 3.1). The monitoring sites will be used throughout the implementation of the OMP to assess the progress in relation to the specified performance targets and completion criteria (refer Section 0), which will be reported as stipulated in Section 7 or otherwise stated by the Project EPBC Act controlled action approval conditions.

6.1 Habitat quality success indicators monitoring

Monitoring habitat value will be consistent with the methodology of the *Guide to determining terrestrial habitat quality* (Version 1.2) and MHQA (refer Appendix C) and the criteria weighting in Appendix D. Monitoring for habitat values will take a quantitative (measurable) and in some cases qualitative (descriptive) approach to aid precision and justification of decisions. As per the MHQA methodology, qualitative data is to be adequately supported by robust scientific evidence. Transect sites for habitat assessments will occur at the same coordinates of the original transect for uniformity in results. Habitat value assessments will be carried out by suitably qualified persons. Star pickets at the origin, 50 m mark and end have been established for easy location of transect line. Scores will be compared to the reference benchmark for the RE 12.3.4, which is analogous to the Coastal Swamp Sclerophyll Forest TEC, in addition to the condition thresholds and key diagnostics of the TEC. Figure 3.1 shows the location of the monitoring sites.

These attributes measured will assist in indicating the progress towards ecological maturity and increase the conditions for Coastal Swamp Sclerophyll Forest TEC and Koala habitat.

Habitat quality monitoring using the above method and further described in Appendix C will be completed in years 5, 10, 15 and 20 to determine if the habitat quality score has been maintained or improved for the proposed offset site. Baseline data will be used to establish the starting condition of the environment. Where the habitat quality assessments do not show improvements in each of the habitat attributes, and the overall habitat quality for the proposed offset site, the adaptive management framework (refer Section 8.2) and performance criteria (refer Section 0) will be used to review the management actions and corrective actions (refer Section 9) that may be required to be implemented. The habitat quality monitoring is to be reported in the annual reporting period in the years of assessment (refer Section 7).

6.2 Rehabilitation and regeneration monitoring

The progress and success of the Coastal Swamp Sclerophyll Forest TEC and Koala habitat restoration will be monitored and assessed annually. Rehabilitation planning and implementing will be led by a suitably qualified environmental consultant. Timing of monitoring is dependent upon the bush regeneration contractor. Any planting that occurs at the proposed offset site 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 as specified in the technical specification prepared within 12 months of the OMP commencement (refer Table 5.2).

Monitoring of rehabilitated planting will include:

- GPS coordinates and photos of the location and extent of rehabilitated areas
- 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/survival of planted stock
 - Average health and height of planted 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.

Table 6.1 Proposed offset site monitoring – Rehabilitation and regeneration

Monitoring actions	Timing	Activity provider
<ul style="list-style-type: none"> ■ Follow up inspections to be conducted at least 1 month after large rainfall events (>100 mm over 24 hours) where any damaged plantings are to be replaced, and debris carefully removed to prevent further damage. 	<ul style="list-style-type: none"> ■ Large rainfall events (>100 mm over 24 hours) within the first 5 years of establishment. 	SCC offset team or suitably qualified bush regeneration contractor.
<ul style="list-style-type: none"> ■ Habitat quality assessments using MHQA to determine if the habitat quality score has been maintained and improved by 1 point or more by year 20 for the proposed offset site for the Koala and 1 or more points for the TEC. 	<ul style="list-style-type: none"> ■ MHQA undertaken at years 5, 10, 15, and 20. 	SCC offset team or suitably qualified bush regeneration contractor.

6.3 Pest and weed monitoring

6.3.1 Pest animal monitoring

The potential for pest animal abundance fluctuations in response to changing environmental conditions mandates that ongoing monitoring is required to adequately respond to this threatening process. Monitoring is required both before and after active control (refer Section 5.2). As such, pest monitoring will be undertaken on an annual (yearly) basis, including:

- Pest control (refer Section 5.2)
- Annual pre-control monitoring/assessment (in conjunction with rehabilitation and regeneration monitoring) for the first 5 years, followed by monitoring during year 5, 10, 15, 20 (as part of the MHQA surveys)
- Additional control (if required) (refer Section 5.2).

Baseline assessment (initial pre-control assessment) will be used to determine the annual baseline level of pests across the proposed offset site and will be completed by the deployment of a minimum of four cameras over a period of 12 days at repeatable, fixed locations. These fixed locations will consider the spatial coverage and habitat variation across the proposed offset site, and will ensure that all target offset MNES habitats are assessed.

To supplement the formal annual monitoring events, incidental observations of pests (i.e. pest animals sighted whilst work is being undertaken for other activities) will also be recorded and included within the annual compliance reporting (refer Section 7). Observations of pest animals are to include the following:

- Pest animal species
- Location of observation
- Date and time of observation
- Number of individuals
- Age class (juvenile/sub-adult/adult)
- Sex (male/female).

Results of baseline assessment and incidental observations will be used to determine the baseline pest relative activity level, which will be used by a specialist pest control professional, to determine the extent of pest control response required to reduce and/or maintain the annual relative activity (refer Section 5.2).

Pest animal monitoring will be developed and completed by a suitably qualified and licenced pest management practitioner.

Monitoring of pest animals will include:

- GPS coordinated mapping to determine presence and location of sighting/evidence of presence (e.g. scats, tracks) will be recorded within the proposed offset site
- A copy of the previous year's data and baseline mapping will be consulted before and after the assessments to determine any notable changes
- Create or collate data with previous years to develop an excel document listing all GPS points and pest occurrences for ongoing monitoring purposes and annual compliance reporting
- Maintain and monitor any long-term preventions and mitigation measures for grazing animals (e.g. fences or tree guards in place)
- Targeted trapping programs or a previously confirmed controlled management method will be implemented at the end of the monitoring period if deemed suitable.

Monitoring of pest animals and outcomes will be reported annually in the compliance report (refer Section 7). Where no pest animals are recorded in a monitoring period, monitoring will be reduced to every second year.

A summary of monitoring required to inform ongoing pest animal management, is summarised in Table 6.2.

Table 6.2 Proposed offset site monitoring – Pest animals

Monitoring actions	Timing	Activity provider
■ Baseline assessment (initial pre-control assessment).	■ Baseline monitoring to be undertaken within 3 months of OMP commencement.	SCC offset team or suitably qualified or suitably qualified and licenced pest specialist.
■ Annual pre-control monitoring/assessment.	■ On an annual basis, prior to ongoing pest animal control activities.	SCC offset team or suitably qualified or suitably qualified and licenced pest specialist.

The pest animal monitoring data will support informed decision-making by improving confidence in the effectiveness of management actions and identifying when corrective measures are needed (refer adaptive management in Section 8.2).

6.3.2 Weed monitoring

Weed monitoring will occur on an annual basis for the first 5 years and in year 5, 10, 15 and 20 thereafter or until such time as the completion criteria (refer Section 4.3) are achieved.

Timing of the monitoring will be consistent across years to ensure consistency with the baseline assessment. Annual monitoring of WoNS and locally significant weeds will include:

- GPS coordinated mapping to identify and define the location of weed infestations, the relative density of weeds and the spatial coverage of weeds within the proposed offset site
- A recorded datasheet, either hard-copy or tablet form, to identify the year, date, time, observed weed species, photo location, direction, and any other notes about the weed coverage
- A copy of the previous year's data and baseline mapping will be consulted before and after the assessments to determine any notable changes and establish the starting condition of the environment
- Create or collate data with previous years to develop an excel document listing all GPS points and a weed survey map for ongoing monitoring purposes and annual compliance reporting.

Post-treatment monitoring of weeds will be completed in areas of active weed control (refer Section 5.3) to assess effectiveness of specific areas of weed control and inform future management actions. Systematic weed monitoring will also be undertaken across the proposed offset site to assess effectiveness of weed control against performance criteria. Post-treatment monitoring will occur within six weeks of active weed control and systematic weed monitoring will occur annually.

A summary of monitoring required to inform ongoing weed management, is summarised in Table 6.3.

Table 6.3 Proposed offset site monitoring – Weed management

Management action	Timing	Activity provider
<ul style="list-style-type: none"> ■ Post-treatment monitoring will be completed in areas of active weed control to assess effectiveness of specific areas of weed control and inform future management actions. ■ Systematic weed monitoring will also be completed across the proposed offset site to assess effectiveness of weed control against performance criteria (refer Section 0). ■ Annual pre-control monitoring/assessment (in conjunction with rehabilitation and regeneration monitoring) for the first 5 years, followed by monitoring during year 5, 10, 15, 20 (as part of the MHQA surveys) 	<ul style="list-style-type: none"> ■ Systematic weed monitoring will occur annually for the first 5 years, followed by monitoring during year 5, 10, 15, 20 	<p>SCC offset team or suitably qualified and licenced bush regenerator.</p>

7 Reporting actions

The SCC will prepare a Project annual compliance report associated with the key metrics of this OMP. The Annual Compliance Report will be provided to DCCEEW for each 12 month period following the date of commencement of the proposed action and will continue for the duration of the OMP (i.e. 20 years), or otherwise in accordance with an annual date that has been agreed to in writing by the Commonwealth Minister for the Environment and Water or their delegate. The Project annual compliance report will be consistent with the DCCEEW *Annual Compliance Report Guidelines* (DCCEEW, 2023a) (refer Appendix E).

The Project annual compliance report will address how the conditions of the proposed offset site have changed in relation to the progress on OMP performance targets, interim milestones, completion criteria, management actions and monitoring actions during the 12 month period. The effectiveness of management actions and monitoring actions in achieving or contributing to achieving the completion criteria will also be included in the annual compliance report. The annual compliance report is adapted to document evidence that is both measurable and transparent.

Any non-compliance with the requirements of the OMP will be made transparent within the annual compliance report.

During the first 5 years of the OMP, SCC will review the suitability/success of the management actions. If the findings of this review require the OMP to be revised (i.e. outside of adaptive management), the revised OMP will be submitted to DCCEEW for review and approval prior to implementation. The periodic technical review and evaluation of the OMP will be undertaken by a relevant review committee, which will include a suitably qualified ecologist/s. Technical reviews will address, at a minimum, monitoring, risks, and response to risk levels and changing circumstances.

8 Risk assessment, adaptive management and auditing

This section provides the following information:

- Risk assessment associated with the delivery of the offset (refer Section 8.1)
- Details of how the proposed OMP will adopt an adaptive management strategy (refer Section 8.2).

8.1 Risk assessment

A qualitative risk assessment which considers the risks of achieving the objectives and outcomes for the proposed offset site is presented in this section.

The risk assessment has been prepared in accordance with the EPBC Act Environmental Management Plan Guidelines (DCCEEW, 2024) and characterises risk as low, medium, high or severe (refer Table 8.1), as derived from the risk likelihood (i.e. highly likely, likely, possible, unlikely or rare) (refer Table 8.2) and the risk consequence (i.e. minor, moderate, high, major or critical) (refer Table 8.3).

The risk analysis assesses the risk of failure to achieve the OMP performance targets and completion criteria. It is necessary to re-evaluate and modify the risk analysis and contingency measures throughout the duration of the implementation of the OMP, particularly if any unforeseen risks emerge or any negative outcomes identified are greater than expected.

During the first 5 years of the OMP monitoring and Project annual compliance reporting, SCC will annually review management commitments in this OMP, and if the findings of the review result in the need to revise the OMP, it will be revised and submitted to DCCEEW for review and approval prior to its implementation. It is noted that events are only addressed once in the risk assessment under the most relevant management objective, however some events are likely to impact multiple management objectives. The risk analysis is presented in Table 8.4.

Table 8.1 Risk categories

		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

Source: DCCEEW (2024)

Table 8.2 Risk likelihood

Qualitative measure of likelihood	
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

Table 8.3 Risk consequence

Qualitative measure of consequences	
Minor	Minor risk of failure to achieve the plan's objectives. Results in short-term delays to achieving plan objectives, implementing low-cost, well-characterized corrective actions.
Moderate	Moderate risk of failure to achieve the plan's objectives. Results in short-term delays to achieving plan objectives, implementing well-characterized, 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 8.4 Risk analysis

Management objective/ outcome	Performance targets and/or completion criteria	Event circumstance	Relevant management measure/s to manage risk of failure to achieve performance targets and/or completion criteria	Risk assessment			Risk mitigation monitoring and reporting
				Likelihood	Consequence	Residual Risk level	
Legal security	To legally secure approved offset properties for conservation.	Failure to legally secure approved offset site.	<ul style="list-style-type: none"> Legally secure the offset site by way of VDec under the <i>Vegetation Management Act 1999</i> (Qld) and statutory covenant under the <i>Land Title Act 1994</i> (Qld) 	Rare	Moderate	Low	<ul style="list-style-type: none"> Proposed action cannot commence without legally securing the offset site with a VDec. Statutory covenant to be in place within 12 months of securing the VDec
Increase habitat quality	<p>The species richness and condition of the habitat quality for the two target offset MNES will be maintained or increased between each successive habitat quality assessment.</p> <p>Recovery of native plant species and recruitment of canopy species.</p>	Failure to uplift the quality of habitat for the two target offset MNES associated with this OMP.	<ul style="list-style-type: none"> Foraging and shelter trees prioritised for replanting efforts. Practice hygiene procedures when entering and leaving the site, cleaning tools, boots and equipment. Follow procedures set out in the DCCEEW Arrive Clean, Leave Clean guidelines (DotE, 2015). Weed and pest animal management. 	Unlikely	Moderate	Low	<ul style="list-style-type: none"> Ongoing monitoring to occur for the duration of the OMP. Habitat quality assessments (MHQA) to be undertaken every 5 years for the Coastal Swamp Sclerophyll Forest TEC and habitat identified for the Koala. Habitat quality assessment report will compile and make an assessment of photo point monitoring data, and habitat quality results. Habitat quality assessment report will undertake recalculation of the proposed offset site score to determine condition trajectory and ascertain if the proposed offset site has achieved the outcome. Adaptive management, review and amendments to the OMP to occur if trajectory not on track A detailed report will be submitted to DCCEEW at an interval not exceeding 5 years.

Management objective/ outcome	Performance targets and/or completion criteria	Event circumstance	Relevant management measure/s to manage risk of failure to achieve performance targets and/or completion criteria	Risk assessment			Risk mitigation monitoring and reporting
				Likelihood	Consequence	Residual Risk level	
Weed management	Reduce weed infestations to the target levels as species within Section 0 of this OMP, assessed through annual monitoring.	Failure to control weeds.	<ul style="list-style-type: none"> Baseline weed mapping listed in Section 5 within the proposed offset site completed and a weed management strategy developed and implemented within 12 months of OMP commencement. Initial treatment of all WoNS identified in the baseline mapping within 12 months of OMP commencement. Ongoing treatment – frequency to be advised by annual performance and compliance reporting. Frequency will be high initially and drop off over the 20-year period. 	Possible	Moderate	Medium	<ul style="list-style-type: none"> Weed mapping and strategy within 12 months of OMP commencement, initial treatment within 12 months. Monitoring and maintenance of WoNS, restricted matters as defined by the Biosecurity Act and locally significant weeds within the proposed offset site and annual compliance reports. Ongoing treatment – frequency to be advised by annual performance and compliance reporting.
Pest animal management	Occurrence of pest animals remains at or below levels estimated through baseline biodiversity assessments.	Failure to reduce the threat of introduced pest animals.	<ul style="list-style-type: none"> Development of a pest animal control program/management strategy within the proposed offset site in line with regional pest management strategies within 12 months of commencement. Annual updates to the pest animal control program based on monitoring outcomes. 	Possible	Moderate	Low	<ul style="list-style-type: none"> Monitoring and maintenance of pest animals within the proposed offset site and annual compliance reports.

Management objective/ outcome	Performance targets and/or completion criteria	Event circumstance	Relevant management measure/s to manage risk of failure to achieve performance targets and/or completion criteria	Risk assessment			Risk mitigation monitoring and reporting
				Likelihood	Consequence	Residual Risk level	
Fire management	Maintain burn interval regimes in accordance with RE 12.3.4 fire management guidelines as defined in the Queensland REDD for the duration of the offset period.	A high intensity uncontrolled fire occurs within the proposed offset site which causes loss of habitat.	<ul style="list-style-type: none"> Actions as directed by the local authority which may include prescribed burning or other techniques undertaken in consultation with the Queensland Rural Fire Brigade to manage fuel loads. Management of Pigeon grass through weed control. 	Possible	Moderate	Medium	<ul style="list-style-type: none"> Annual monitoring requirements to review access tracks, fire breaks, fuel loads and outcomes of controlled burns or other management techniques. If wildfire occurs in the proposed offset site, the following actions will be undertaken: <ul style="list-style-type: none"> Implement fire control Repair any fire breaks and access tracks Stay informed through the Rural Fire Service Assess damage caused by the wildfire and monitor for natural regeneration. Where natural regeneration is failing to thrive, assist natural regeneration through direct seeding and planting. Monitoring to occur post re-planting to determine success of replaced plants – as per monitoring actions in Table 6.1.
Public access	No evidence of unauthorised access, off-track disturbance, or vegetation trampling within the offset site.	Uncontrolled public access (e.g. pedestrian off-track access, trampling) leading to habitat damage.	<ul style="list-style-type: none"> Design and install highly visible, durable, and clear signage at reserve entry points and along existing tracks. Signage includes clear directives (e.g. "Environmental protection area, please keep out"). 	Unlikely	Moderate	Low	<ul style="list-style-type: none"> Annual inspection of offset site for signs of unauthorised access or formation of new tracks. Reporting: Record location and extent of access/damage in the annual compliance report. Block access to unauthorised tracks and where necessary rehabilitate track.
Flood management	Reestablishment of planting mortalities from large flooding events	100 mm of rainfall over 24 hours	<ul style="list-style-type: none"> Follow up inspections to be conducted at least 1 month after large rainfall events (>100 mm over 24 hours) where any damaged plantings are to be replaced, and debris carefully removed to prevent further damage. 	Possible	Moderate	Medium	<ul style="list-style-type: none"> Monitoring to occur post re-planting to determine success of replaced plants – as per monitoring actions in Table 6.1.

8.2 Adaptive management of offset delivery

Adaptive management will be implemented to facilitate the success of the milestone targets and monitoring programs as outline in this OMP. An adaptive implementation program will be used to ensure uncertainty is reduced over time, and that the completion criteria are attained and maintained over the period of approval. As indicated in Section 8.1, adaptive management is a key component in reducing uncertainty associated with future risk. As more information becomes available following ongoing performance monitoring, the management and monitoring regime will be reviewed and revised to maximise the likelihood of attaining and maintaining the outcomes to be achieved by implementing the OMP.

Adaptive management will be used to incorporate changes in any of the following areas:

- Assimilation of new data or information – such as, updates to conservation advice or new threat abatement plans relevant to the species or community
- Project coordination and scheduling – to manage unforeseen disruptions to schedule such as inclement weather on contractor works for management actions and environmental consultant monitoring events
- Annual review of risks – to refresh the mitigation actions/measures should new threats be identified or stochastic events such as unplanned fires or floods occur
- Annual plan review of management measure effectiveness – to increase the frequency or change the method of management actions where monitoring performance criteria are not met
- Contingency for unplanned incidents – such as stochastic events including unplanned fires or floods.

9 Corrective actions

If performance targets and completion criteria identified within Section 0 are not met, an adaptive management strategy (refer Section 8.2) is to be adopted to ensure compliance (i.e. in instances of drought, fire, disease, or planting failure). In instances where weeds persist within the proposed offset site, or excessive mortality within revegetation zones, management strategies are to be reevaluated and updated to ensure that performance targets, interim milestones and completion criteria are met. Reviews of the proposed offset site management will occur every 3 years and/or upon failure to meet the performance targets, interim milestones or completion 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 for the Coastal Swamp Sclerophyll Forest TEC, and 5 out of 10 for the Koala habitat 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 are achieved
- If WoNS, locally significant weeds, or pest animals are detected, the management actions and frequency of the management actions 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 effected 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 as a consequence of these instances, for instance weed infestation, will be managed to ensure the completion criteria for that value is attained.

Any alterations to any component of this OMP will be reviewed and approved by the DCCEEW and to be accompanied by an adaptive management statement which clearly outlines the plan component to be altered and the reasoning for the alteration.

10 Implementation and monitoring schedules

Implementation of management measures, monitoring and the timing of these components is a key determining factor that will influence the successful delivery of the OMP. A summary of management measures, monitoring requirements and their associated timing is provided in Table 10.1 and Table 10.2, respectively. A risk assessment that assesses the potential to achieve this schedule is contained within Section 8.1 of this OMP.

Table 10.1 Implementation schedule

Management objective/outcome	Performance targets and/or completion criteria	Management measure/s	Timing	Activity provider	Related monitoring activity
1. Increase habitat quality	The species richness and condition of the habitat quality for the two target offset MNES will be maintained or increased between each successive habitat quality assessment. Recovery of native plant species and recruitment of canopy species.	<ul style="list-style-type: none"> Foraging and shelter trees should be prioritised for replanting efforts Practice hygiene procedures when entering and leaving the site, cleaning tools, boots and equipment. Follow procedures set out in the DCCEEW Arrive Clean, Leave Clean guidelines (DotE, 2015). Weed and pest animal management. 	<ul style="list-style-type: none"> Throughout the life of the offset. Habitat quality assessments (MHQA) to be undertaken every 5 years for the Coastal Swamp Sclerophyll Forest TEC and habitat identified for the Koala. A detailed report will be submitted to DCCEEW at an interval not exceeding 5 years. 	Environmental professional/s that are suitably qualified and directed by the proposed offset site manager.	<ul style="list-style-type: none"> Ongoing monitoring to occur for the duration of the OMP. Monitoring will occur every five years for the duration of the OMP. The detailed report will compile and make an assessment of photo point monitoring data, and habitat quality results. The summary report will undertake recalculation of the proposed offset site score to determine condition trajectory and ascertain if the proposed offset site has achieved the outcome.
2. Weed management	Reduce weed infestations to the target levels as species within Section 0 of this OMP, assessed through annual monitoring.	<ul style="list-style-type: none"> Baseline weed mapping listed in Section 5 within the proposed offset site completed and a weed management strategy developed and implemented within 12 months of OMP commencement. Initial treatment of all WoNS identified in the baseline mapping within 12 months of OMP commencement. Ongoing treatment – frequency to be advised by annual performance and compliance reporting. Frequency will be high initially and drop off over the 20-year period. 	<ul style="list-style-type: none"> Weed mapping and strategy within 12 months of OMP commencement, initial treatment within 12 months. Ongoing treatment – frequency to be advised by annual performance and compliance reporting. 	Environmental professional/s that are suitably qualified and directed by the proposed offset site manager.	<ul style="list-style-type: none"> Monitoring and maintenance of WoNS, restricted matters as defined by the Biosecurity Act and locally significant weeds within the proposed offset site and annual compliance reports.

Management objective/ outcome	Performance targets and/or completion criteria	Management measure/s	Timing	Activity provider	Related monitoring activity
3. Pest animal management	Occurrence of pest animals remains at or below levels estimated through baseline biodiversity assessments.	<ul style="list-style-type: none"> Development of a pest animal control program/management strategy within the proposed offset site in line with regional pest management strategies within 12 months of commencement. Annual updates to the pest animal control program based on monitoring outcomes. 	<ul style="list-style-type: none"> Annual assessment. 	Environmental professional/s that are suitably qualified and directed by the proposed offset site manager	Monitoring and maintenance of pest animals within the proposed offset site and annual compliance reports.

Table 10.2 Monitoring schedule

Monitoring activity	Management needs/ questions addressed	Parameter/s measured	Survey/monitoring guidelines	Monitoring frequency	Reliability
1. Ecological condition	Improvement of habitat scores.	As per MHQA methodology	As per MHQA methodology.	<ul style="list-style-type: none"> Every 5 years. 	Certain
2. Weeds	Success of the control measures.	Weed cover and species present.	Visual site inspection by suitably qualified bush regenerators.	<ul style="list-style-type: none"> Weed mapping and strategy within 12 months of commencement, initial treatment within 12 months. Ongoing treatment – frequency to be advised by annual performance and compliance reporting. 	Certain
3. Feral animals	Success of the control measures.	Relative activity of pest animals and control measures undertaken.	Wildlife camera surveys.	<ul style="list-style-type: none"> Annually. 	Certain

11 Conclusion

The Project OMP for the proposed offset site has been developed in accordance with the overarching principles and aims of the EPBC Act Environmental Offsets Policy (DSEWPC, 2012a), request for additional information required for assessment by Preliminary Documentation for the Caloundra Transport Corridor Upgrade Project (EPBC 2024/09956). Adherence to the management actions and commitments contained within this document will ensure that the proposed offset will be delivered to the required standard in the specified timeframes.

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Appendix A

Project offset assessment guide calculated for the target offset MNES

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 1999
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	CSSF TEC
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	1.2%

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator						
Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
<i>Ecological communities</i>						
Area of community	Yes		Area	2.09	Hectares	
			Quality	7	Scale 0-10	
			Total quantum of impact	1.46	Adjusted hectares	
<i>Threatened species habitat</i>						
Area of habitat	No		Area			
			Quality			
			Total quantum of impact	0.00		
<i>Threatened species</i>						
<i>Number of features</i> e.g. Nest hollows, habitat trees						
	No					
<i>Condition of habitat</i> Change in habitat condition, but no change in extent						
	No					
<i>Birth rate</i> e.g. Change in nest success						
	No					
<i>Mortality rate</i> e.g. Change in number of road kills per year						
	No					
<i>Number of individuals</i> e.g. Individual plants/animals						
	No					

Offset calculator																			
Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start area and quality	Future area and quality without offset	Future area and quality with offset	Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost (\$ total)	Information source			
<i>Ecological Communities</i>																			
Area of community	Yes	1.46	Adjusted hectares	18.53	Risk-related time horizon (max. 20 years)	20	Start area (hectares)	18.53	Risk of loss (%) without offset	0%	Risk of loss (%) with offset	0%	0.00	80%	0.00	0.00	2.34	159.64%	Yes
					Future area without offset (adjusted hectares)	18.5	Future area with offset (adjusted hectares)	18.5	0.00	80%	1.60	1.26							
					Time until ecological benefit	20	Start quality (scale of 0-10)	7	Future quality without offset (scale of 0-10)	6	Future quality with offset (scale of 0-10)	8	2.00	80%	1.60	1.26			
<i>Threatened species habitat</i>																			
Area of habitat	No				Time over which loss is averted (max. 20 years)		Start area (hectares)		Risk of loss (%) without offset		Risk of loss (%) with offset								
					Future area without offset (adjusted hectares)	0.0	Future area with offset (adjusted hectares)	0.0											
					Time until ecological benefit		Start quality (scale of 0-10)		Future quality without offset (scale of 0-10)		Future quality with offset (scale of 0-10)								
<i>Threatened species</i>																			
<i>Number of features</i> e.g. Nest hollows, habitat trees																			
	No																		
<i>Condition of habitat</i> Change in habitat condition, but no change in extent																			
	No																		
<i>Birth rate</i> e.g. Change in nest success																			
	No																		
<i>Mortality rate</i> e.g. Change in number of road kills per year																			
	No																		
<i>Number of individuals</i> e.g. Individual plants/animals																			
	No																		

Summary							
Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost (\$)		
					Direct offset (\$)	Other compensatory measures (\$)	Total (\$)
Birth rate	0				\$0.00		\$0.00
Mortality rate	0				\$0.00		\$0.00
Number of individuals	0				\$0.00		\$0.00
Number of features	0				\$0.00		\$0.00
Condition of habitat	0				\$0.00		\$0.00
Area of habitat	0				\$0.00		\$0.00
Area of community	1.463	2.34	159.64%	Yes	\$0.00	N/A	\$0.00
					\$0.00	\$0.00	\$0.00

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 1999
2 October 2012

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	1.2%

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Impact calculator						
Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
<i>Ecological communities</i>						
Area of community	No		Area			
			Quality			
			Total quantum of impact	0.00		
<i>Threatened species habitat</i>						
Area of habitat	Yes		Area	4.65	Hectares	
			Quality	5	Scale 0-10	
			Total quantum of impact	2.33	Adjusted hectares	
<i>Threatened species</i>						
Protected matter attributes						
Number of features e.g. Nest hollows, habitat trees						
Condition of habitat Change in habitat condition, but no change in extent						
Birth rate e.g. Change in nest success						
Mortality rate e.g. Change in number of road kills per year						
Number of individuals e.g. Individual plants/animals						

Offset calculator																				
Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost (\$ total)	Information source	
<i>Ecological Communities</i>																				
Area of community	No				Risk-related time horizon (max. 20 years)	Start area (hectares)	Risk of loss (%) without offset		Risk of loss (%) with offset											
							Future area without offset (adjusted hectares)	0.0	Future area with offset (adjusted hectares)	0.0										
							Time until ecological benefit		Start quality (scale of 0-10)		Future quality without offset (scale of 0-10)		Future quality with offset (scale of 0-10)							
<i>Threatened species habitat</i>																				
Area of habitat	Yes	2.33	Adjusted hectares	18.53	Time over which loss is averted (max. 20 years)	20	Start area (hectares)	18.53	Risk of loss (%) without offset	0%	Risk of loss (%) with offset	0%								
									Future area without offset (adjusted hectares)	18.5	Future area with offset (adjusted hectares)	18.5								
									Time until ecological benefit	20	Start quality (scale of 0-10)	5	Future quality without offset (scale of 0-10)	4	Future quality with offset (scale of 0-10)	6	2.00	80%	1.60	1.26
Protected matter attributes																				
Number of features e.g. Nest hollows, habitat trees																				
Condition of habitat Change in habitat condition, but no change in extent																				
Birth rate e.g. Change in nest success																				
Mortality rate e.g. Change in number of road kills per year																				
Number of individuals e.g. Individual plants/animals																				

Summary							
Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost (\$)		
					Direct offset (\$)	Other compensatory measures (\$)	Total (\$)
Birth rate	0				\$0.00		\$0.00
Mortality rate	0				\$0.00		\$0.00
Number of individuals	0				\$0.00		\$0.00
Number of features	0				\$0.00		\$0.00
Condition of habitat	0				\$0.00		\$0.00
Area of habitat	2.325	2.34	100.45%	Yes	\$0.00	N/A	\$0.00
Area of community	0				\$0.00		\$0.00
					\$0.00	\$0.00	\$0.00

Appendix B

Profiles of protected matters applicable to the proposed offset site

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland Threatened Ecological Community

The Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland threatened ecological community (Coastal Sclerophyll Swamp Forest TEC) includes the plants, animals and other organisms typically associated with forested palustrine wetlands, or swamp forests, found in the temperate to subtropical coastal valleys of Australia's east coast. The Coastal Sclerophyll Swamp Forest TEC often has a layered canopy, dominated by melaleucas and/or *Eucalyptus robusta*. The ecological community occurs between the Great Dividing Range and the coastline from near Gladstone in Queensland, through to the south coast of New South Wales.

The structure of the Coastal Swamp Sclerophyll Forest TEC varies from open woodland to closed forest with a crown cover of at least 10% and typically no more than 70%. The understorey has a diverse range of hydrophytic plants ranging from freshwater sedges, ferns and grasses.

The following key diagnostic characteristics from the Coastal Swamp Sclerophyll Forest TEC conservation advice (Department of Agriculture, Water and the Environment (DAWE) 2021a) identify the ecological community:

- Occurs on the mainland and islands near to the coast (within 20 km) from South East Queensland to south-eastern NSW
- Occurs in coastal catchments typically below 20 m ASL, but occasionally up to 220 m ASL.
- Occurs on hydric soils with inundation patterns ranging from intermittent to episodic.
- The vegetation structure varies from tall closed to open forest to woodland, to dense (closed) shrubland or scrub forest. Minimum crown cover is at least 10%, but it is more typically in the range 50% to 70%.
- The canopy is typically dominated or co-dominated by *Melaleuca quinquenervia* and/or *Eucalyptus robusta*.
- Other tree species may occur in the canopy (or sub-canopy) in some areas, but they are not dominant across a patch
- The understorey typically includes a variable ground layer, depending on the canopy cover and inundation rate/period.

The main ongoing threats to this TEC include changed hydrological regimes, vegetation clearance, invasive fauna, impacts associated with fragmentation of remnants, disturbance from urbanisation and recreational activity, diseases and pathogens, altered fire regimes and weeds.

The Coastal Swamp Sclerophyll Forest TEC has been extensively cleared for development purposes because it primarily occurs on flat and relatively fertile soils. Clearing has dramatically decreased its extent, and the resulting fragmentation has made the TEC more vulnerable to threats such as weed invasion.

Weeds compete with native species for space, light, water and nutrients. They also suppress and out-compete mid-storey and canopy trees. Transformer weeds are highly invasive plants with the potential to seriously alter the structure and function of the TEC they invade, thereby 'transforming' them into a different system.

Urbanisation results in impacts such as the invasion of bushland by domestic dogs and cats, rubbish dumping, trampling, garden escapes, firewood collection, impacts from vehicles, the creation of informal trails, and arson. Urbanisation also increases pressure to reduce bushfire fuel loads that may be detrimental to the ecological community.

Koala

The Koala is a medium-sized, arboreal marsupial endemic to Australia, with a range from north-eastern Queensland to the southeast corner of South Australia.

Within Queensland, the highest density of the Koala population occurs in South East Queensland. Lower densities occur through central and eastern areas (Youngentob et al., 2021).

Koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by *Eucalyptus* species and their habitat can be broadly defined as any forest or woodland containing species that are known Koala food trees, or shrubland with emergent food trees. The distribution of this habitat is largely influenced by land elevation, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clay soils.

In coastal lowlands in Queensland, Koalas are also found in vegetation communities dominated by *Melaleuca* or *Casuarina* species (Youngentob et al., 2021).

The following habitat critical to the survival of the species has also been defined in the species' conservation advice (DAWE 2022a):

- Whether the habitat is used during periods of stress (examples: flood, drought or fire)
- Whether the habitat is used to meet essential life cycle requirements (examples: foraging, breeding, nesting, roosting, social behaviour patterns or seed dispersal processes)
- The extent to which the habitat is used by important populations
- Whether the habitat is necessary to maintain genetic diversity and long-term evolutionary development
- Whether the habitat is necessary for use as corridors to allow the species to move freely between sites used to meet essential life cycle requirements
- Whether the habitat is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation, and
- Any other way in which habitat may be critical to the survival of a listed threatened species or a listed threatened ecological community.

Koalas are folivores, feeding primarily during the dawn, dusk or night periods. The Koala's diet is restricted mainly to *Eucalyptus* spp.; however, they may also consume foliage of related genera (Family: Myrtaceae), including *Corymbia* spp., *Angophora* spp. and *Lophostemon* spp. (Youngentob et al., 2021).

Whilst Koalas maintain a defined home-range, they are not considered to be territorial, and there may be significant overlap in the distribution of home-ranges. Home range size is also variable with those occurring within poorer quality habitat, being relatively larger in size, when compared to those that are located within higher quality habitat.

Koalas have naturally low fecundity, with females potentially producing a single offspring a year, with births occurring within the warmer months of the year (e.g. October through to May). The estimated lifespan of wild Koalas is generally greater than 15 years in females and 12 years in males.

The main threats to the Koala include:

- Habitat loss and fragmentation
- Mortality associated with dog attacks and vehicle strikes
- Disease (i.e. Chlamydiosis)
- Climate change and drought
- Other threats such as Bell Miner Associated Dieback and Myrtle rust, both of which impact the health and quantity of available forage (DAWE, 2022a).

Appendix C

Methodology to assess habitat quality for offset site

Offset assessment guide

Information derived from the modified habitat quality assessment, together with an assessment of threatening process and estimates of time to achieve the offset objectives was used to inform the offset assessment guide for the MNES subject to this OMP. The EPBC Act Environmental Offsets Policy also applies habitat quality scores that:

- Represent the quality of a defined area of threatened flora or species habitat using indicators that measure and combine relevant habitat attributes which influence the viability of the species.
- Are rounded to the nearest whole number (scores between 0 to 10).

Under the EPBC Act Environmental Offsets Policy framework, habitat quality scores (HQS) at both impact area and land-based proposed offset site are applied in the offset calculation, using HQS values which represent:

- The quality of the impact area – representing the impact area HQS at the time of the EPBC Act Preliminary Documentation assessment.
- The start quality of the proposed offset site – representing the proposed offset site HQS at the time of the EPBC Act Preliminary Documentation assessment (or commencement date in the case of advanced offsets).

Modified Habitat Quality Assessment

For land-based offsets, the proposed offset site is measured by undertaking a habitat quality assessment in accordance with the EPBC Act Offsets Assessment Guide (DCCEEW, 2023b) and *How to use the Offsets Assessment Guide* (DSEWPC, 2012b). The unpublished MHQA methodology (DCCEEW, 2024) was chosen as the preferred and most thorough method of assessing habitat quality at the impact and proposed offset site. The MHQA adapts the methodology outlined in the Queensland *BioCondition Assessment Manual* (Version 2.2) (Queensland Herbarium, 2015) and the *Guide to determining terrestrial habitat quality* (Version 1.2) (Department of Environment and Science, 2020). The MHQA introduces an additional habitat factor, the species stocking rate, in order to satisfy the requirements of EPBC Act Offset Policy Principles. Further modifications include the changes to categorisation of the assessment criteria for species habitat indexes, as presented and justified in Appendix D.

The method utilises benchmark scores to ensure assessments are measured to a known standard, repeatable and consistent in determining habitat quality. Two rounds of habitat quality assessments were conducted at the Project impact area and at the proposed offset site by two suitably qualified ecologists in December 2024, and January, February and November 2025.

This MHQA approach is appropriate for the TEC and Koala as it quantifies available habitat features. Attributes such as the density of large trees, the quality and extent of foraging and shelter habitat, are weighted in scoring within each Assessment Unit (AU). Surveys for the Koala were incorporated into justification for species stocking rate attributes in accordance with *A review of Koala habitat assessment criteria and methods* (Youngentob et al., 2021). The specific methods deployed for Koala surveys located at the Project impact area included thermal drone surveys, bioacoustic monitoring, and Koala scat detection dogs.

Initial confirmation that the Coastal Swamp Sclerophyll Forest TEC occurs within the proposed offset site was undertaken using the criteria identified in the key diagnostics and condition threshold outlined in the Coastal Swamp Sclerophyll Forest TEC conservation advice (DAWE, 2021a). The location of appropriate habitat for the Coastal Swamp Sclerophyll Forest TEC subject to this OMP within the proposed offset site boundary is mapped in Figure 2.2.

Assessment Units

In determining habitat quality scores, habitat areas are first delineated into AUs. An AU refers to an area or a group of areas within the matter area (i.e. the proposed offset site or impact area) that is homogenous in vegetation community classification (i.e. Regional Ecosystem (RE)) and broad condition state (i.e. remnant, regrowth or non-remnant). Each AU reflects a particular community with similar structure, function and quality of habitat. Sampling sites were then selected for each AU and site-based attribute data and species habitat attribute data was collected at each sampling site.

Vegetation assessments were undertaken in accordance with Neldner et al. (2022) and comprised quaternary assessments to determine REs and broad condition status. Sample site locations were chosen within a representative assessment unit. AUs consist of relatively homogeneous vegetation patches characterised by a distinct RE and broad condition state.

Within Racecourse Road Reserve, three AUs were identified. Of these two AUs were observed to be in alignment with the required habitat for all target offset MNES required for the proposed offset and are described as follows:

- AU3 (8.56 ha) – representative of RE 12.3.4 (*Melaleuca quinquenervia*, *Eucalyptus robusta* woodland on coastal alluvium) in a remnant broad condition status – two sampling transects were conducted in this AU as per table 1 of the terrestrial habitat guidelines.
- AU4 (9.98 ha) – representative of RE 12.3.4 in a regrowth broad condition status – two sampling transects were conducted in this AU as per table 1 of the terrestrial habitat guidelines.

Habitat quality scoring

Sampling transects were completed using the methodologies described by the *Guide to determining terrestrial habitat quality* (Version 1.2) (Department of Environment and Science, 2017). The approach for assessing habitat quality for the Koala weighs habitat quality for species using three key indicators, being site context, site condition, and species stocking rate, with the default ratios being 30%, 30% and 40%, respectively. The ratio at which these indicators make up a species overall habitat quality were adjusted based on a variety of factors, including:

- The cryptic nature and detectability of the species
- The species' stochastic or intermittent use of habitat
- The significance of specific attributes within the indicators (e.g. the quality and availability of food and foraging habitat, threats, patch size, and connectivity).

Table C.1 presents a summary of the indicator weightings with associated justification used in the assessment of habitat quality for each of the target offset MNES subject to this OMP.

Table C.1 Habitat quality Indicator weightings

Matter	Ratio	Justification
Coastal Swamp Sclerophyll Forest TEC	70% Site condition 30% Site context	Default weightings considered suitable based on community requirements.
Koala habitat	30% Site Condition 30% Site Context 40% Species stocking rate	Default weightings provided by DCCEEW for MHQA considered suitable based on species habitat requirements and detectability.

Site condition

Site condition data was collected within 100 m x 50 m areas (including various sub-plots) for each AU, weighted in accordance with the Terrestrial Habitat Quality Guide and compared to BioCondition benchmark values for the relevant RE benchmark (Queensland Herbarium, 2025). Quality and availability of food, foraging habitat and shelter was also incorporated into the assessment of site condition (refer for further explanation of weighting and justification).

The quality assessments measured the following site-based condition attributes:

- Large trees
- Tree canopy height
- Recruitment of canopy species
- Tree canopy cover (%)
- Shrub layer cover (%)
- Coarse woody debris
- Non-native plant cover
- Native perennial grass cover (%)
- Native plant species richness for four lifeforms (trees, shrubs, grasses, forbs and other)
- Leaf-litter cover
- Quality and availability of food and foraging habitat (for fauna values only)
- Quality and availability of shelter (for fauna values only).

It should be noted that these attributes vary from the BioCondition framework and terrestrial habitat guidelines, as DCCEE (2024) provides guidance to include 'Quality and availability of food and foraging habitat' and 'Quality and availability of shelter' (both for fauna values only) under the site condition assessment.

As the Project location occurs in South East Queensland, the subregion is considered as fragmented and therefore, landscape attributes, over distance to permanent water, were used to determine the landscape attribute score.

Site context

The habitat quality assessments measured the following landscape attributes for site context:

- Size of patch
- Context
- Connectivity
- Ecological corridors
- Role of site location to TEC overall population in the State
- Threats to the species.

It should be noted that these attributes vary from BioCondition framework and terrestrial habitat quality guidelines, as DCCEE (2024) provides guidance to include 'Threats', 'Role of the site location' and 'Species mobility capacity' under the site context assessment.

The landscape attributes were calculated and measured using the geospatial systems. The score was derived using calculations provided as prescribed in the *Guide to determining terrestrial habitat quality* (Version 1.2) (Department of Environment and Science, 2017).

Species stocking rate

Species stocking rates are established using results from surveys conducted with best-practice techniques designed to maximise detectability of the target species, as well as information about the species derived from peer reviewed studies and conservation advice. Surveys were deployed in optimal conditions and applied a survey effort in accordance with the relevant species' survey guidelines. For species with adequate population data, estimated density ranges were derived from database records. The following attributes were assessed for the species stocking rates:

- Presence detected on or adjacent to the site
- Species usage on the site

- Approximate density (per ha)
- Role/importance of species population on site, this attribute was broken down into the following sub-attributes:
 - Key source population for breeding
 - Key source population for dispersal
 - Necessary for maintaining genetic diversity
 - Near the limit of the species range.

The species stocking rate assessments are detailed in DCCEEW (2024). Justification of scores used for the assessment are provided in Appendix D.

Appendix D

Modified Habitat Quality Assessment results and justification

OFFSET - Threatened Ecological Community (meets TEC listing thresholds)

CSSF																
Assessment Unit - Regional Ecosystem																
Site Reference	Benchmark 12.3.4	AU3						AU4						B10		
		Site B01			Site B03			Site B02			Site B06					
		Raw Data	% Benchmark	Score	Raw Data	% Benchm.	Score	Raw Data	% Benchm.	Score	Raw Data	% Benchm.	Score	Raw Data	% Benchmark	Score
Site Condition																
Recruitment of woody perennial species in EDL	100	100	100%	5	50	50%	3	50	50%	3	100	100%	5	33.3	33%	3
Native plant species richness - trees	5	3	60%	2.5	2	40%	2.5	2	40%	2.5	5	100%	5	6	120%	5
Native plant species richness - shrubs	7	10	143%	5	15	214%	5	8	114%	5	13	186%	5	9	129%	5
Native plant species richness - grasses	1	1	100%	5	3	300%	5	2	200%	5	3	300%	5	1	100%	5
Native plant species richness - forbs	11	11	100%	5	10	91%	5	23	209%	5	13	118%	5	8	73%	2.5
Tree canopy height	17	11			15			9			12			3		
Subcanopy height	9	8			0			9			0			0		
Tree Height	13	9.5	73%	5	7.5	58%	3	9	69%	3	6	46%	3	1.5	12%	0
Tree canopy cover	59	10			15			24			25			31.15		
Subcanopy cover	25	45			0			0			0			0		
Tree Cover	42	27.5	65%	5	7.5	18%	2	12	29%	2	12.5	30%	2	15.575	37%	2
Shrub canopy cover	21	42.5	202%	3	60	286%	3	20	95%	5	40	190%	5	7.4	35%	3
Native grass cover	10	33.5	335%	5	61	610%	5	3	30%	1	5	50%	1	33.5	335%	5
Organic litter	33	48.5	147%	5	20	61%	5	2	6%	0	26	79%	5	9	27%	3
Large trees (euc plus non-euc)	141	10	7%	5	24	17%	5	42	30%	5	42	30%	5	2	1%	5
Coarse woody debris	508	225	44%	2	88	17%	2	0	0%	0	0	0%	0	0	0%	0
Non-native plant cover		0	0%	10	0	0%	10	6	6%	5	80	80%	0	50	50%	3
Site Condition Score				62.5			55.5			41.5			46			41.5
MAX Site Condition Score				80			80			80			80			80
Site Condition Score - out of 7				5.47			4.86			3.63			4.03			3.63
Site Context																
Size of patch				10			10			10			10			10
Connectedness				5			5			5			5			5
Context				4			4			4			4			4
Ecological Corridors				6			6			6			6			6
Role of site location to TEC overall population in the state				5			5			5			5			5
Changed hydrological regime (17%)		7			7			7			7			7		
Native vegetation clearing (17%)		7			7			7			7			7		
Fragmentation of remnants and habitats (16%)		1			1			1			1			1		
Invasive fauna (5%)		7			7			7			7			7		
Disturbance from urbanisation and recreational activity (10%)		1			1			1			1			1		
Weed (10%)		7			7			7			7			7		
Diseases and pathogens (5%)		15			15			15			15			15		
Grazing pressures (5%)		15			15			15			15			15		
Increased frequency of Bushfire (15%)		1			1			1			1			1		
Threats to the species				12.09			12.09			12.09			12.09			12.09
Site Context Score				42.09			42.09			42.09			42.09			42.09
MAX Site Context Score				46			46			46			46			46
Site Context Score - out of 3				2.75			2.75			2.75			2.75			2.75

UPDATED CALCS

Final habitat quality score (weighted)	AU3	AU4	Final
Site Condition score (out of 7)	5.16	3.76	
Site Context Score (out of 3)	2.75	2.75	
Habitat Quality score (out of 10)	7.91	6.51	
Assessment Unit area (ha)	8.56	9.98	
Total offset area (ha) for this MNES	18.54	18.54	
Size Weighting	0.46	0.54	
Weighted Habitat Quality Score	3.65	3.50	7.15

rounded

OFFSET - Fauna Species

Koala

Assessment Unit - Regional Ecosystem	AU3									AU4								
Site Reference	B.mark	Site B01			Site B03			Site B02			Site B06			B10				
	12.3.4	Raw Data	% B.mark	Score														
Site Condition																		
Recruitment of woody perennial species in EDL	100	100	100%	5	50	50%	3	50	50%	3	100	100%	5	33.3	33%	3		
Native plant species richness - trees	5	3	60%	2.5	2	40%	2.5	2	40%	2.5	5	100%	5	6	120%	5		
Native plant species richness - shrubs	7	10	143%	5	15	214%	5	8	114%	5	13	186%	5	9	129%	5		
Native plant species richness - grasses	1	1	100%	5	3	300%	5	2	200%	5	3	300%	5	1	100%	5		
Native plant species richness - forbes	11	11	100%	5	10	91%	5	23	209%	5	13	118%	5	8	73%	2.5		
Tree canopy height	17	11			15			9			12			3				
Subcanopy height	9	8						9			0			0				
Tree Height	13	9.5	73%	5	7.5	58%	3	9	69%	3	6	46%	3	1.5	12%	0		
Tree canopy cover	59	10			15			24			25			31.15				
Subcanopy cover	25	45			0			0			0			0				
Tree Cover	42	27.5	65%	5	7.5	18%	2	12	29%	2	12.5	30%	2	15.575	37%	2		
Shrub canopy cover	21	42.5	202%	3	60	286%	3	20	95%	5	40	190%	5	7.4	35%	3		
Native grass cover	10	33.5	335%	5	61	610%	5	3	30%	1	5	50%	1	64.4	644%	5		
Organic litter	33	48.5	147%	5	20	61%	5	2	6%	0	26	79%	5	9	27%	3		
Large trees (euc plus non-euc)	141	10	7%	5	24	17%	5	42	30%	5	42	30%	5	2	1%	5		
Coarse woody debris	508	225	44%	2	88	17%	2	0	0%	0	0	0%	0	0	0%	0		
Non-native plant cover	0	0	0%	10	0	0%	10	6	6%	5	80	80%	0	50	50%	3		
Abundance of locally important koala habitat trees (LIKT) combined cover (sub-canopy, ca		4			4			4			4			4				
Large trees (20%)		5			5			5			5			5				
Quality and availability of food and foraging habitat				4.2			4.2			4.2			4.2			4.2		
Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree) ≥10 cm DBH within ass		4			4			7			7			7				
Large trees (20%)		5			5			5			5			5				
Quality and availability of shelter				4.2			4.2			6.6			6.6			6.6		
Site Condition Score				70.9			63.9			52.3			56.8			52.3		
MAX Site Condition Score				100			100			100			100			100		
Site Condition Score - out of 3				2.13			1.92			1.57			1.70			1.57		
Site Context																		
Size of patch				10			10			10			10			10		
Connectedness				5			5			5			5			5		
Context				4			4			4			4			4		
Ecological Corridors				6			6			6			6			6		
Role of site location to species overall population in the state				5			5			5			5			5		
Area occupied by predators (i.e. dogs) or vehicles (33.34%)				7			7			7			7			7		
Broadscale clearing/fragmentation or selective removal of canopy trees (33.33%)				7			7			7			7			7		
Increased frequency of Bushfire (33.33%)				1			1			1			1			1		
Threats to the species				5			5			5			5			5		
Species mobility capacity				7			7			7			7			7		
Site Context Score				42			42			42			42			42		
MAX Site Context Score				56			56			56			56			56		
Site Context Score - out of 3				2.25			2.25			2.25			2.25			2.25		

Species Stocking Rate (SSR)				Site score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5	10	5	
		No	Yes - adjacent	Yes - on site		
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	5
		Not habitat	Dispersal	Foraging	Breeding	
Approximate density (per ha)	Score	0	10	20	30	10
		0				
Role/importance of species population on site*	Score (Total from supplementary table below)	0	5	10	15	0
		0	5 - 15	20 - 35	40 - 45	
Total SRR score (out of 70)					20	
SRR Score (out of 4)					1.14	



*SSR Supplementary Table				Score
*Key source population for breeding	Score	0	10	0
		No	Yes/ Possibly	
*Key source population for dispersal	Score	0	5	0
		No	Yes/ Possibly	
*Necessary for maintaining genetic diversity	Score	0	15	0
		No	Yes/ Possibly	
*Near the limit of the species range	Score	0	15	0
		No	Yes	

Final habitat quality score (weighted)	AU3	AU4	Final
Site Condition score (out of 3)	2.02	1.61	
Site Context Score (out of 3)	2.25	2.25	
Species Stocking Rate Score (out of 4)	1.14	1.14	
Habitat Quality score (out of 10)	5.41	5.00	
Assessment Unit area (ha)	8.56	9.98	
Total offset area (ha) for this MNES	18.54	18.54	
Size Weighting	0.46	0.54	
Weighted Habitat Quality Score	2.50	2.69	5.19

rounded

CSSF TEC Scoring Methodology

Key Habitat Values	KHV Weighting	Criteria	Criteria Weighting	Indicator	Indicator Weighting	Components	Component Weighting	Score options	Scoring Guidance	Score	Justification	
Site condition	70%	BioCondition	100%	Recruitment of woody perennial species in EDL	According to maximum scores	-	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	As per MHQA	/5	As per MHQA	
				Native plant species richness - trees		-	-			/5		
				Native plant species richness - shrubs		-	-			/5		
				Native plant species richness - grasses		-	-			/5		
				Native plant species richness - forbs		-	-			/5		
				Tree Height		Tree canopy height	50%			/5		
						Subcanopy height	50%			/5		
				Tree Cover		Tree canopy cover	50%			/5		
						Subcanopy cover	50%			/5		
				Shrub canopy cover		-	-			/5		
				Native grass cover		-	-			/5		
				Organic litter		-	-			/5		
				Large trees		-	-			/15		
				Coarse woody debris		-	-			/5		
Non-native plant cover	-	-	/10									
Site Context & TEC habitat index	30%	Site Context	56.52%	Size of patch	According to maximum scores	-	-	In accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015)	Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)	/10	Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017)	
				Connectedness		-	-			/5		
				Context		-	-			/5		
				Ecological Corridors		-	-			/6		
				Role of site location to TEC overall population in the state	According to maximum scores					1	/5	Where the site meets the Key diagnostic criteria and condition thresholds it will be critical to the community survival. Where it does not meet either , but has the potential to meet it will be likely to be critical to the species' survival. Where it does not have the potential to meet either KDC or condition threshold it will be classed as unlikely to be critical to the species survival.
									4			
									5			
				Habitat index	43.48%	Threats to the TEC	According to maximum scores	Changed hydrological regime	17%	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017) and Threats identified in the Conservation advice for the CSSF (DAWE 2021)	As per MHQA and the threats to the species as per the conservation advice for the CSSF TEC. Threats such as climate change that do not relate to the proposed action have not been considered for the site. Threats have been weighted according to their level of threat for the TEC	/15
			Native vegetation clearing					17%				
			Fragmentation of remnants and habitats					16%				
			Invasive fauna					5%				
			Disturbance from urbanisation and recreational activity					10%				
			Weed					10%				
			Diseases and pathogens					5%				

					Grazing pressures	5%		
					Increased frequency of Bushfire	15%		

Koala Scoring Methodology

Key Habitat Values	KHV Weighting	Criteria	Criteria Weighting	Indicator	Indicator Weighting	Components	Component Weighting	Score options	Scoring Guidance	Score	Justification			
Site condition	30%	BioCondition	80%	Recruitment of woody perennial species in EDL	According to maximum score	-	-	As per the MHQA (Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))		/5	As per MHQA			
				Native plant species richness - trees		-	-			/5				
				Native plant species richness - shrubs		-	-			/5				
				Native plant species richness - grasses		-	-			/5				
				Native plant species richness - forbs		-	-			/5				
				Tree Height		Tree canopy height	50%			/5				
						Subcanopy height	50%			/5				
				Tree Cover		Tree canopy cover	50%			/5				
						Subcanopy cover	50%			/5				
				Shrub canopy cover		-	-			/5				
				Native grass cover		-	-			/5				
				Organic litter		-	-			/5				
				Large trees		-	-			/15		As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017). Raw data values have been doubled to be able to compare to the benchmark value per BioCondition Assessment Manual (Eyre et al. 2015)		
		Coarse woody debris	-	-	/5	As per the MHQA (Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))								
		Non-native plant cover	-	-	/10									
				Species habitat condition	20%	Quality and availability of food and foraging habitat	50%	Abundance of locally important koala habitat trees (LIKT) combined cover (sub-canopy, canopy, emergent)	80%	0	No LIKTs present	/10	As described by Youngentob et al. (2021), LIKTs within the south east Queensland bioregion. Cover of LIKT is in relation to only the LIKT's and not the cover of the Ecologically dominant layer.	
										2	LIKT species present but only juvenile trees (less than 10cm Diameter at Breast Height) present			
										4	LIKT species present with <20% cover			
										6	LIKT species present with ≥ 20-50% cover			
										10	LIKT tree species present with ≥ 50% cover			
Large trees	20%					0		no large trees	/10	Larger trees provide greater quality of foraging opportunities for the Koala. Larger trees will provide a greater abundance and better-quality foliage for foraging.				
						5		0-50% of BioCondition benchmark						
						10		>50% of BioCondition benchmark						
Quality and availability of shelter	50%					Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree) ≥10 cm DBH within assessment area		50%	0		0-10% cover of LIKT and ancillary tree species	/10		The > 10cm DBH threshold and list of ancillary species was derived from a review of koala habitat assessment criteria and methods (Youngentob et al., 2021). Cover should be the combined LIKT and Ancillary habitat tree cover and excluding the cover of all other species. Where LIKT and Ancillary cover is likely to exceed 80% habitat type is unlikely to be either woodland or forest which typically have 5-
									4		10-20% cover of LIKT and ancillary tree species OR >80% cover of LIKT and ancillary tree species			
		7	21-50% cover of LIKT and ancillary tree species											
		10	>50% cover of LIKT and ancillary tree species											
Large trees	50%			0	no large trees	/10	Larger trees offer more shelter opportunities for koalas, with bigger limbs and more branches available for them to shelter in (for example, koalas can use the trunk and branches to protect themselves from sun and wind) (Moore and Foley 2005, Gallahar et al 2021, Callahan et al 2011).							
				5	0-50% of BioCondition benchmark									
				10	>50% of BioCondition benchmark									

Koala Scoring Methodology

Key Habitat Values	KHV Weighting	Criteria	Criteria Weighting	Indicator	Indicator Weighting	Components	Component Weighting	Score options	Scoring Guidance	Score	Justification		
Site Context & species habitat index	30%	Site Context	51%	Size of patch	38.46%	-	-	In accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017) and BioCondition Assessment Manual (Eyre et al. 2015)	/10	/5	/5		
				Connectedness	19.23%	-	-						
				Context	19.23%	-	-						
				Ecological Corridors	23.08%	-	-						
		Habitat index	49%	Species Mobility Capacity	33.34%	Role of site location to species overall population in the state	17%	-	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	/5	/10	As per MHQA
										1	Severely Restricted - The site is functionally isolated from all other suitable Koala habitat in the landscape. 76-100% reduction in capacity by major, continuous barriers such as wide, high-speed roads or rail without crossing structures, large areas of permanent clearing (2km wide), barbwire fencing, or major water bodies.		
										4	Highly Restricted - Movement is partially restricted by one or more significant barriers that reduce connectivity and increase mortality risk (51-75% reduction in capacity). Barriers are present (e.g., busy secondary roads, buildings or wide cleared paddocks) that periodically or incompletely restrict movement but do not completely isolate a population.		
										7	Movement is mostly unconstrained, but minor barriers or limiting factors exist. Connectivity is generally good. Barriers are typically low-impact (e.g., narrow, low-traffic roads, tracks, or minor fencing) that may pose a low-level reduction to mobility (26-50%). Movement paths may contain dense groundcover or have low canopy cover but are still utilised.		
										10	The site is fully connected and forms an integral part of a larger, viable Koala habitat network. Movement is unconstrained by natural or artificial barriers (e.g., 0-5% reduction in capacity). Movement corridors are wide, continuous, and safe, allowing for full dispersal and genetic exchange with the broader Koala population.		
										-	-		

Koala Scoring Methodology

Key Habitat Values	KHV Weighting	Criteria	Criteria Weighting	Indicator	Indicator Weighting	Components	Component Weighting	Score options	Scoring Guidance	Score	Justification
Site Context & species habitat index (cont'd)	30%	Habitat index	49%	Threats to species*	26.79%	Encounter mortality with predators (i.e. dogs) or vehicles	33%	1	High risk in the region (1km radius). High-density urban/peri-urban area. Numerous database records of wild dogs. Numerous or high-speed (80km+) roads without koala fencing.	/15	Weightings for each threat have been determined as per the risk rating of each threat from Table 1 of the Conservation Advice for Koala (DCCEEW, 2022) and with consideration of the local area (including impact and offset area)
						7		Moderate risk in the region (1km). Low-to-medium density residential or peri-urban fringe area. Koala movement corridors are near established residential areas with moderate dog ownership/density. Infrequent wild dog sightings. Secondary or low-speed (60km) streets present in the area.			
						15		Low risk in the region (1km). Rural/ conservation area with very low human/ dog density. Low to no wild dog records; large, contiguous, safe habitat. Few or no roads or quiet/low speed (50 or below streets).			
						Broadscale clearing/fragmentation or selective removal of canopy trees	33%	1	High risk in region (1km) Pervasive Clearing / Fragmentation. The site is/surrounded by isolated patches (<1 ha) with a high edge-to-area ratio, completely surrounded by non-habitat (e.g., intensive agriculture, urban development, or extensive clearing). The canopy has been heavily and selectively cleared. No protected areas (National Parks).	/15	
						7		Moderate risk in region (1km). Fragmentation is widespread but not pervasive (25-75%). Some potential fauna corridors exist and connect the site. The surrounding area contains a mix of non-habitat and smaller, fragmented patches (1-5 ha). Selective clearing has created gaps in the canopy, but key structural trees are mostly retained. Some protected areas may occur.			
						15		Low Risk in Region (1km). Broadscale clearing is minimal and primarily historic. The site is part of a large, contiguous habitat patch (e.g., >50 ha) or is well-connected to such a block by corridors. Selective clearing is absent or historic. Protected areas occur or are contiguous with the site. Protections exist on site to prevent development.			

Koala Scoring Methodology

Key Habitat Values	KHV Weighting	Criteria	Criteria Weighting	Indicator	Indicator Weighting	Components	Component Weighting	Score options	Scoring Guidance	Score	Justification	
Site Context & species habitat index (cont'd)	30%	Habitat index	49%	Threats to species	26.79%	Increased frequency of Bushfire	20%	1	High risk in the region (1km radius). Extreme Fire Risk and Consequence. The site is located in an area with a historically high frequency of severe, high-intensity fires (e.g., on a cycle of <5 years), or the habitat type (e.g., dry sclerophyll forest) is highly fire-susceptible (e.g. stringbark presence). No recent or existing fire management strategy or mitigation is in place (e.g., no fire breaks/fuel reduction). Fuel within and surrounding the site is high.	/15		
								7	Moderate risk in the region (1km radius). The site is in an area with a moderate fuel load and unplanned bushfire frequency (e.g., on a cycle of 10–20 years). A basic fire management strategy is in place, but may not cover the entire site effectively. Refugia areas (e.g., riparian zones) are limited or not highly accessible during a severe fire event.			
								15	Low risk in the region (1km radius). The site is in an area with historically low fire frequency (e.g., >25 years between major unplanned bushfire events), is within a wet forest/rainforest habitat type with low combustibility, or a built up urban area with low tree cover and maintained gardens. A comprehensive and actively maintained fire management plan (e.g., fire breaks, managed burns) is in place, refugia areas are easily accessible to koalas.			
Stocking Rate	40%	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	14.29%	As per the MHQA							/10	
		Species usage of the site (habitat type)	21.43%								/15	
											0	

Species		42.86%					
	Approximate density (per ha)				20	10-20 koalas records on site or within 5 km ² (ALA, 2025) or 2 to 3 koalas recorded within or immediately surrounding the offset area	/30
	Role/importance of species population on site	21.43%	As per the MHQA		30	>20 koala desktop records within site or 5 km ² (ALA, 2025), or ≥4 koalas within or immediately surrounding the offset area	/15

Koala Habitat Quality Scoring

Impact Site -Koala

Key habitat value	Habitat Criteria	Indicator	Scoring guidance	Indicator weighting	Indicator score per assessment unit			Justification
					AU1	AU2	AU6	
Koala								
Species habitat condition	Quality and availability of food and foraging habitat	Abundance of locally important koala habitat trees (LIKT) combined cover (sub-canopy, canopy, emergent)	<ul style="list-style-type: none"> ■ 0 = No LIKTs present ■ 2 = LIKT species present but only juvenile trees (less than 10cm Diameter at Breast Height) present ■ 4 = LIKT species present with <20% cover ■ 6 = LIKT species present with ≥ 20-50% cover ■ 10 = LIKT tree species present with ≥ 50% cover 	80%	10	5	4	Eucalyptus pilularis was dominant in AU1, whilst AU2 had more Melaleuca. AU6 have less than 20% cover
		Large trees	<ul style="list-style-type: none"> ■ 0 = no large trees ■ 5 = 0-50% of benchmark ■ 10 = >50% of benchmark 	20%	5	10	5	Larger trees provide greater quality of foraging opportunities for the Koala. Larger trees will provide a greater abundance and better-quality foliage for foraging.
	Quality and availability of shelter habitat	Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree) ≥10 cm DBH within assessment area	<ul style="list-style-type: none"> ■ 0 = 0-10% cover of LIKT and ancillary tree species ■ 4 = 10-20% cover of LIKT and ancillary tree species (>10cm DBH). OR >80% cover of LIKT and ancillary tree species ■ 7 = 21-50% cover of LIKT and ancillary tree species (>10cm DBH). ■ 10 = 50-80% cover of LIKT and ancillary tree species (>10cm DBH). 	80%	10	5	4	Eucalyptus pilularis was dominant in AU1, whilst AU2 had more Melaleuca. AU6 have less than 20% cover of LIKT and ancillary trees
		Large trees	<ul style="list-style-type: none"> ■ 0 = no large trees ■ 5 = 0-50% of benchmark ■ 10 = >50% of benchmark 	20%	5	10	5	Tall trees (>10 m) were available on the impact area site.
	Threats to species	Area occupied by predators (i.e. dogs) or vehicles	Each individual threat was scored in accordance with Guide to determining terrestrial habitat quality Version 1.2, where threats are categorised as follows: <ul style="list-style-type: none"> ■ High level of threat = 1 ■ Moderate level of threat = 7 ■ Low level of threat = 15 	30%	1	1	1	Domestic dogs are common in the area within residential dwelling surrounding the impact area. High traffic vehicle use due to the State-controlled road of Nicklin Way and local roads.
		Broadscale clearing/fragmentation or selective removal of canopy trees		30%	7	7	7	Broadscale clearing has occurred in the area.
Weed infestations that restrict movement			20%	7	11	1	Currently the impact area has weed coverage, including presence of potentially invasive species such as ochna and green panic	

Koala Habitat Quality Scoring

		Increased frequency of Bushfire	20%	7	7	15	Currently the impact area has had no recent burns and contains large amounts of fuel loads, being that it is close to an urban area, it could be subject to deliberate or accidental ignitions.
Habitat index	Species mobility capacity	-	<ul style="list-style-type: none"> ■ 1 = Severely Restricted - The site is functionally isolated from all other suitable Koala habitat in the landscape. 76-100% reduction in capacity by major, continuous barriers such as wide, high-speed roads or rail without crossing structures, large areas of permanent clearing (2km wide), barbwire fencing, or major water bodies. 	100%	4		The area surrounding the impact area is highly fragmented, with roads and urbanisation.
			<ul style="list-style-type: none"> ■ 4 = Highly Restricted - Movement is partially restricted by one or more significant barriers that reduce connectivity and increase mortality risk (51-75% reduction in capacity). Barriers are present (e.g., busy secondary roads, buildings or wide cleared paddocks) that periodically or incompletely restrict movement but do not completely isolate a population. ■ 7 = Movement is mostly unconstrained, but minor barriers or limiting factors exist. Connectivity is generally good. Barriers are typically low-impact (e.g., narrow, low-traffic roads, tracks, or minor fencing) that may pose a low-level reduction to mobility (26-50%). Movement paths may contain dense groundcover or have low canopy cover but are still utilised. ■ 10 = The site is fully connected and forms an integral part of a larger, viable Koala habitat network. Movement is unconstrained by natural or artificial barriers (e.g., 0-5% reduction in capacity). Movement corridors are wide, continuous, and safe, allowing for full dispersal and genetic exchange with the broader Koala population. 				

Koala Habitat Quality Scoring

Species stocking rate	Approximate density (per ha)	Koala records on ALA within the last 5 years and 5km ² or koalas recorded within or properties adjacent to the offset area ² .	<ul style="list-style-type: none"> ■ 0 = no koala records ■ 10 = 1-10 koala desktop records within 5 km² (ALA, 2025), or 1 koala recorded within the offset area or immediately surrounding the offset area ■ 20 = 10-20 koalas desktop records within 5 km² (ALA, 2025) or 2 to 3 koalas recorded within or immediately surrounding the offset area ■ 30 = >20 koala desktop records within 5 km² (ALA, 2025) or ≥4 koalas or immediately surrounding the offset area 	100%	10	Within a 5 km radius of the impact area there is only 1 Koala sighting within the last 5 years. No Koalas have been recorded within or surrounding the impact area
	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	100%	0	The following targeted surveys were conducted for the species: thermal drone surveys, Koala detection dog surveys, and spotlighting. No Koalas were observed occupying the habitat within or surrounding the impact area.
	Species usage of the site (habitat type and evidenced usage)	-		100%	15	The impact area will be removing potential foraging and breeding habitat that was present within the disturbance footprint.
	Role/importance of species population on site	-		100%	0	Considering the overall patch size and lack of connectivity, the habitat found on the impact area is unlikely to be a key source for maintaining for genetic diversity, breeding or dispersal. The Caloundra landscape region has been identified by the SCC as a low conservation priority for Koala populations and habitat ranking (SCC 2022). The species is not at the limit of its range.

Koala Habitat Quality Scoring

Offset Site - Koala

Key habitat indicator	Habitat Criteria	Indicator	Scoring guidance	Indicator weighting	Indicator score per assessment unit		Justification
					AU3	AU4	
Koala							
Species habitat condition	Quality and availability of food and foraging habitat	Abundance of locally important koala habitat trees (LIKT) combined cover (sub-canopy, canopy, emergent)	<ul style="list-style-type: none"> ■ 0 = No LIKTs present ■ 2 = LIKT species present but only juvenile trees (less than 10cm Diameter at Breast Height) present ■ 4 = LIKT species present with <20% cover ■ 6 = LIKT species present with ≥ 20-50% cover ■ 10 = LIKT tree species present with ≥ 50% cover 	80%	4	4	As described by Youngentob et al. (2021), LIKTs within the South-East Queensland bioregion comprises: <i>Corymbia citriodora</i> , <i>C. henryi</i> , <i>Eucalyptus acmenoides</i> , <i>E. andrewsii</i> , <i>E. baileyana</i> , <i>E. bancroftii</i> , <i>E. brownii</i> , <i>E. camaldulensis</i> , <i>E. campanulata</i> , <i>E. carnea</i> , <i>E. crebra</i> , <i>E. deanei</i> , <i>E. decorticans</i> , <i>E. drepanophylla</i> , <i>E. dunnii</i> , <i>E. dura</i> , <i>E. eugenioides</i> , <i>E. exserta</i> , <i>E. fibrosa</i> , <i>E. grandis</i> , <i>E. hallii</i> , <i>E. helidonica</i> , <i>E. laevopinea</i> , <i>E. latisinensis</i> , <i>E. longirostrata</i> , <i>E. major</i> , <i>E. melanophloia</i> , <i>E. microcarpa</i> , <i>E. microcorys</i> , <i>E. moluccana</i> , <i>E. obliqua</i> , <i>E. ochrophloia</i> , <i>E. orgadophila</i> , <i>E. planchoniana</i> , <i>E. populnea</i> , <i>E. portuensis</i> , <i>E. propinqua</i> , <i>E. psammitica</i> , <i>E. punctata</i> , <i>E. racemosa</i> , <i>E. resinifera</i> , <i>E. robusta</i> , <i>E. saligna</i> , <i>E. seeana</i> , <i>E. siderophloia</i> , <i>E. sideroxylon</i> , <i>E. tereticornis</i> and <i>E. tindaliae</i> . Preferred food tree species were derived from the National Recovery Plan for the Koala. The following food tree species were observed within the canopy of both AUs: <i>Eucalyptus</i> spp. and <i>Lophostemon</i> spp..
		Large trees	<ul style="list-style-type: none"> ■ 0 = no large trees ■ 5 = 0-50% of benchmark ■ 10 = >50% of benchmark 	20%	5	5	Larger trees provide greater quality of foraging opportunities for the Koala. Larger trees will provide a greater abundance and better-quality foliage for foraging.
	Quality and availability of shelter habitat	Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree) ≥10 cm DBH within assessment area	<ul style="list-style-type: none"> ■ 0 = 0-10% cover of LIKT and ancillary tree species ■ 4 = 10-20% cover of LIKT and ancillary tree species (>10cm DBH). OR >80% cover of LIKT and ancillary tree species ■ 7 = 21-50% cover of LIKT and ancillary tree species (>10cm DBH). ■ 10 = 50-80% cover of LIKT and ancillary tree species (>10cm DBH). 	80%	7	7	The > 10 cm DBH threshold and list of ancillary species was derived from a review of koala habitat assessment criteria and methods (Youngentob et al., 2021).
		Large trees	<ul style="list-style-type: none"> ■ 0 = no large trees ■ 5 = 0-50% of benchmark ■ 10 = >50% of benchmark 	20%	5	5	Larger trees offer more shelter opportunities for koalas, with bigger limbs and more branches available for them to shelter in. (For example, koalas can use the trunk and branches to protect themselves from sun and wind). Tall trees (>10 m) are found on the offset site.

Koala Habitat Quality Scoring

Threats to species	Area occupied by predators (i.e. dogs) or vehicles	<p>Each individual threat was scored in accordance with Guide to determining terrestrial habitat quality Version 1.2, where threats are categorised as follows:</p> <ul style="list-style-type: none"> ■ High level of threat = 1 ■ Moderate level of threat = 7 ■ Low level of threat = 15 	30%	7	7	Wild dogs have the potential to be within the offset site, although presence would be rare. The offset site is located 250 m from Racecourse Road which is a moderately busy 4-lane road.
	Broadscale clearing/fragmentation or selective removal of canopy trees		30%	15	15	Broadscale clearing has occurred in the area, however is a fairly low threat in a reserve.
	Weed infestations that restrict movement		20%	15	15	Currently the offset site has a large coverage of South African pigeon grass which can restrict movement for the Koala.
	Increased frequency of Bushfire		20%	7	7	Currently the offset site has a large coverage of South African pigeon grass which can create hot fires that could reach into the canopy via fuel laddering (i.e. facilitation of fire to climb upwards into the canopy by using grasses, weeds, etc).
	Habitat index	Species mobility capacity	<ul style="list-style-type: none"> ■ 1 = Severely Restricted - The site is functionally isolated from all other suitable Koala habitat in the landscape. 76-100% reduction in capacity by major, continuous barriers such as wide, high-speed roads or rail without crossing structures, large areas of permanent clearing (2km wide), barbwire fencing, or major water bodies. ■ 4 = Highly Restricted - Movement is partially restricted by one or more significant barriers that reduce connectivity and increase mortality risk (51-75% reduction in capacity). Barriers are present (e.g., busy secondary roads, buildings or wide cleared paddocks) that periodically or incompletely restrict movement but do not completely isolate a population. ■ 7 = Movement is mostly unconstrained, but minor barriers or limiting factors exist. Connectivity is generally good. Barriers are typically low-impact (e.g., narrow, low-traffic roads, tracks, or minor fencing) that may pose a low-level reduction to mobility (26-50%). Movement paths may contain dense groundcover or have low canopy cover but are still utilised. 	100%	7	

Koala Habitat Quality Scoring

			<ul style="list-style-type: none"> ■ 10 = The site is fully connected and forms an integral part of a larger, viable Koala habitat network. Movement is unconstrained by natural or artificial barriers (e.g., 0–5% reduction in capacity). Movement corridors are wide, continuous, and safe, allowing for full dispersal and genetic exchange with the broader Koala population. 			
Species stocking rate	Approximate density (per ha)	Koala records on ALA within the last 5 years and 5km ² or koalas recorded within or properties adjacent to the offset area ² .	<ul style="list-style-type: none"> ■ 0 = no koala records ■ 10 = 1-10 koala desktop records within 5 km² (ALA, 2025) or 1 koala recorded within the offset area or immediately surrounding the offset area ■ 20 = 10-20 koalas desktop records within 5 km² (ALA, 2025) or 2 to 3 koalas recorded within or immediately surrounding the offset area ■ 30 = >20 koala desktop records within 5 km² (ALA, 2025) or ≥4 koalas or immediately surrounding the offset area 	100%	10	Within a 5 km radius of the offset site there is only 1 koala sighting within the last 5 years. No Koalas have been recorded within or immediately adjacent.
	Presence detected on or adjacent to site (neighbouring property with connecting habitat)	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	100%	5	No Koala were observed in the proposed offset site, however the species was assumed to be present adjacent to the site using habitat as a proxy for the species.
	Species usage of the site (habitat type and evidenced usage)	-		100%	5	Foraging habitat was observed to be present at the proposed offset site. Preferred food tree species were derived from the Locally Important Koala Trees (LIKT) as per definitions listed in a review of koala habitat assessment criteria and methods (Youngentob et al., 2021).
	Role/importance of species population on site	-		100%	0	The habitat found on the proposed offset site as it currently stands is unlikely to be important for maintaining genetic diversity. As a foraging location, the site includes LIKT as per definitions listed in a review of koala habitat assessment criteria and methods (Youngentob et al., 2021), however only one species and in low densities. The proposed offset site contains scattered <i>Eucalyptus robusta</i> , but most dominated by the ancillary tree <i>Melaleuca quinquenervia</i> . The habitat in its current condition is unlikely to be a key source for breeding or dispersal and therefore unlikely to be important for maintaining genetic diversity. The species is not at the limit of its range.

Impact Site - CSSF TEC

Key habitat indicator	Habitat Criteria	Indicator	Indicator weighting	Scoring guidance	Indicator score (AU2)	Justification	Criteria score	
CSSF TEC								
Habitat index	Role of site location to TEC overall population in the state	-	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	-	The patch located at the impact site meets the key diagnostic characteristics and condition thresholds as per the conservation advice of the TEC.	5/5	
	Threats to the TEC	Changed hydrological regime		17%	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017) and Threats identified in the Conservation advice for the CSSF (DAWE 2021). Please note that when indicator score does not equal 1, 7 or 15 this has occurred due to averaging differing scores on biocondition transects for the same AU.	15	The site shows historical changes in flow patterns (altered drainage) causing minor compositional shifts in the vegetation. The impact is significant but not yet catastrophic to the TEC's core structure.	7.74/15
		Native vegetation clearing		17%		7	While the historical clearing events have occurred with ongoing, associated disruptions	
		Fragmentation of remnants and habitats		16%		15	The patches were fragmented however the size of the remnant is large enough and the surrounding land use is benign enough that negative edge effects (e.g., wind, light, weeds external disturbance) are minimal and contained.	
		Invasive fauna		5%		15	Due to the urban fragmented nature of the site it unlikely for feral animals to persist	
		Disturbance from urbanisation and recreational activity		10%		1	The TEC is located nearby to urban areas, Public use of Ben Bennett Park is high.	

	Weed	10%	4		
	Diseases and pathogens	5%	7		
	Grazing pressures	5%	15		
	Increased frequency of Bushfire	15%	11		

Offset Site - CSSF TEC

Key habitat indicator	Habitat Criteria	Indicator	Indicator weighting	Scoring guidance	Indicator score per assessment unit		Justification	Criteria score
					AU3	AU4		
CSSF TEC								
Habitat index	Role of site location to TEC overall population in the state	-	-	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017))	-	-		5/5
	Threats to the TEC	Changed hydrological regime	17%	As per the MHQA (i.e. in accordance with Queensland Guide to Determining Terrestrial Habitat Quality Version 1.2 (DEHP 2017) and Threats identified in the Conservation advice for the CSSF (DAWE 2021). Please note that when indicator score does not equal 1, 7 or 15 this has occurred due to averaging differing scores on biocondition transects for the same AU.	7	7		12.09/15
		Native vegetation clearing	17%		Average: 7			
		Fragmentation of remnants and habitats	16%		7	7		
		Invasive fauna	5%		Average: 7			
		Disturbance from urbanisation and recreational activity	10%		1	1		
		Weed	10%		Average: 1			
		Diseases and pathogens	5%		7	7		
		Grazing pressures	5%		Average: 7			
		Increased frequency of Bushfire	15%		15	15		
					Average: 15			
					15	15		
					Average: 15			
		1	1					
		Average: 1						

Koala EPBC calculator inputs		
Time over which loss is averted (max. 20 years)	20 years	As per the EPBC offset calculator inputs to achieve offset for the species
Time until ecological benefit	20 years	As per the EPBC offset calculator inputs to achieve offset for the species
Risk of loss (%) without offset	0%	In line with the Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act (NESP 2017)
Risk of loss (%) with offset	0%	In line with the Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act (NESP 2017)
Confidence in result (%)	80%	An 80% "confidence in result" value in the EPBC calculator for the Koala is justified by the provisions of the Offset Management Plan. This plan includes clear and measurable performance targets, such as improving habitat quality scores over a defined period, which are based on ecological principles. These management actions are further supported by the corrective actions and adaptive management plan that provides specific triggers for a failure to reach set milestones within the life of the offset. This ensures continuous monitoring and the flexibility to adjust management strategies, effectively mitigating risks and providing a high degree of certainty that the conservation outcomes for the Koala will be achieved.

Future quality without offset	5	The future quality of the offset will likely decrease from a 5 to a 4 due to the unchecked spread of <i>Setaria sphacelata</i> (South African pigeon grass) and its detrimental effect on the native ecosystem. The lack of an offset management plan and subsequent weed management actions will allow this invasive species to outcompete and harm the native Melaleuca canopy, particularly during stochastic unplanned bushfire events.
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CSSF TEC EPBC calculator inputs		
Time over which loss is averted (max. 20 years)	20 years	As per the EPBC offset calculator inputs to achieve offset for the TEC
Time until ecological benefit	20 years	As per the EPBC offset calculator inputs to achieve offset for the TEC
Risk of loss (%) without offset	0%	In line with the Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act (NESP 2017)
Risk of loss (%) with offset	0%	In line with the Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act (NESP 2017)

Confidence in result (%)	80%	<p>An 80% "confidence in result" value in the EPBC calculator for the TEC is justified by the provisions of the Offset Management Plan. This plan includes clear and measurable performance targets, such as improving habitat quality scores over a defined period, which are based on ecological principles. These management actions are further supported by the corrective actions and adaptive management plan that provides specific triggers for a failure to reach set milestones within the life of the offset. This ensures continuous monitoring and the flexibility to adjust management strategies, effectively mitigating risks and providing a high degree of certainty that the conservation outcomes for the Koala will be achieved.</p>
Future quality without offset	6	<p>The future quality of the offset will likely decrease from a 7 to a 6 due to the unchecked spread of <i>Setaria sphacelata</i> (South African pigeon grass) and its detrimental effect on the native ecosystem. The lack of an offset management plan and subsequent weed management actions will allow this invasive species to outcompete and harm the native Melaleuca canopy, particularly during stochastic unplanned bushfire events.</p>

Weighted habitat quality score at Impact site

Current CSSF Score										
Assessment Unit (AU)	AU2									
Average site condition score (out of 7)	5.03									
Average site context score (out of 3)	1.61									
Habitat quality score (out of 10)	6.64									
AU area (ha)	1.43									
Total impact area (ha) for this MNES	1.43									
Size weighting	1.00									
Weighted habitat quality score at Impact site	6.64									
MNES weighted habitat score	6.64									
Current Koala Score										
Assessment Unit (AU)	AU1	AU2	AU6							
Site Condition score (out of 3)	2.60	2.20	1.24							
Site Context Score (out of 3)	1.39	1.46	1.61							
Species Stocking Rate Score (out of 4)	1.43	1.43	1.43							
Habitat quality score (out of 10)	5.42	5.09	4.28							
AU area (ha)	2.31	1.43	0.91							
Total impact area (ha) for this MNES	4.65	4.65	4.65							
Size weighting	0.50	0.31	0.20							
Weighted habitat quality score at Impact site	2.69	1.57	0.84							
MNES weighted habitat score	5.10									

Weighted habitat quality score at Offset site

Current CSSF Score			Future CSSF Score with Offset 15 years						
Assessment Unit (AU)	AU3	AU4	Assessment Unit (AU)	AU3	AU4				
Average site condition score (out of 7)	5.16	3.76	Average site condition score (out of 7)	5.36	5.28				
Average site context score (out of 3)	2.75	2.75	Average site context score (out of 3)	3.10	2.95				
Habitat quality score (out of 10)	7.91	6.51	Habitat quality score (out of 10)	8.46	8.23				
AU area (ha)	8.56	9.98	AU area (ha)	8.56	9.98				
Total impact area (ha) for this MNES	18.54	18.54	Total impact area (ha) for this MNES	18.54	18.54				

OFFSET- Threatened Ecological Community

Assessment Unit	AU3																
Site Reference	Benchmark	Site B01								Site B03							
Site Condition	12.3.4	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)
Recruitment of woody perennial species in EDL	100	100	100%	5	5	5	5	5	5	50	50%	3	3	3	5	5	3
Native plant species richness - trees	5	3	60%	2.5	2.5	2.5	5	5	2.5	2	40%	2.5	2.5	2.5	2.5	5	2.5
Native plant species richness - shrubs	7	10	143%	5	5	5	5	5	5	15	214%	5	5	5	5	5	5
Native plant species richness - grasses	1	1	100%	5	5	5	5	5	5	3	300%	5	5	5	5	5	5
Native plant species richness - forbs	11	11	100%	5	5	5	5	5	5	10	91%	5	5	5	5	5	5
Tree canopy height	17	11								15							
Subcanopy height	9	8								0							
Tree Height	13	9.5	73%	5	5	5	5	5	5	7.5	58%	3	3	3	3	3	3
Tree canopy cover	59	10								15							
Subcanopy cover	25	45								0							
Tree Cover	42	27.5	65%	5	5	5	5	5	5	7.5	18%	2	2	2	2	5	2
Shrub canopy cover	21	42.5	202%	3	3	3	3	5	0	60	286%	3	3	3	3	5	0
Native grass cover	10	33.5	335%	5	5	5	5	5	1	61	610%	5	5	5	5	5	1
Organic litter	33	48.5	147%	5	5	5	5	5	5	20	61%	5	5	5	5	5	5
Large trees	141	10	7%	5	5	5	5	5	5	24	17%	5	5	5	5	5	5
Coarse woody debris	508	225	44%	2	2	2	2	5	2	88	17%	2	2	2	2	5	2
Non-native plant cover	0	0	0%	10	10	10	10	10	3	0	0%	10	10	10	10	10	3
Site Condition Score				62.5	62.5	62.5	65	70	48.5			55.5	55.5	55.5	57.5	68	41.5
MAX Site Condition Score				80	80	80	80	80	80			80	80	80	80	80	80
Site Condition Score - out of 7				5.47	5.47	5.47	5.69	6.13	4.24			4.86	4.86	4.86	5.03	5.95	3.63
Site Context																	
Size of patch				10	10	10	10	10	10			10	10	10	10	10	10
Connectedness				5	5	5	5	5	5			5	5	5	5	5	5
Context				4	4	4	4	4	4			4	4	4	4	4	4
Ecological Corridors				6	6	6	6	6	6			6	6	6	6	6	6
Role of site location to TEC overall population in the state				5	5	5	5	5	5			5	5	5	5	5	5
Changed hydrological regime (17%)				7	7	7	7	7	7			7	7	7	7	7	7
Native vegetation clearing (17%)				7	15	15	15	15	7			7	15	15	15	15	7
Fragmentation of remnants and habitats (16%)				1	15	15	15	15	1			1	15	15	15	15	1
Invasive fauna (5%)				7	7	7	15	15	7			7	7	7	15	15	7
Disturbance from urbanisation and recreational activity (10%)				1	7	7	7	7	1			1	7	7	7	7	1
Weed (10%)				7	7	7	15	15	1			7	7	7	15	15	1
Diseases and pathogens (5%)				15	15	15	15	15	15			15	15	15	15	15	15
Grazing pressures (5%)				15	15	15	15	15	15			15	15	15	15	15	15
Increased frequency of Bushfire (15%)				1	1	1	1	1	1			1	1	1	1	1	1
Threats to the species				12.09	16.29	16.29	17.49	17.49	11.49			12.09	16.29	16.29	17.49	17.49	11.49
Site Context Score				42.09	46.29	46.29	47.49	47.49	41.49			42.09	46.29	46.29	47.49	47.49	41.49
MAX Site Context Score				46	46	46	46	46	46			46	46	46	46	46	46
Site Context Score - out of 3				2.75	3.02	3.02	3.10	3.10	2.71			2.75	3.02	3.02	3.10	3.10	2.71

Assessment Unit	AU4															
Site Reference	Site B02								Site B06							
Site Condition	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset	Future score without offset
Recruitment of woody perennial species in EDL	50	50%	3	3	5	5	5	3	100	100%	5	5	5	5	5	5
Native plant species richness - trees	2	40%	2.5	2.5	3	5	5	2.5	5	100%	5	5	5	5	5	5
Native plant species richness - shrubs	8	114%	5	5	5	5	5	5	13	186%	5	5	5	5	5	5
Native plant species richness - grasses	2	200%	5	5	5	5	5	5	3	300%	5	5	5	5	5	5
Native plant species richness - forbs	23	209%	5	5	5	5	5	5	13	118%	5	5	5	5	5	5
Tree canopy height	9							5	12						5	0
Subcanopy height	9							0	0						5	0
Tree Height	9	69%	3	3	3	5	5	3	6	46%	3	3	3	3	3	3
Tree canopy cover	24							5	25						5	0
Subcanopy cover	0							5	0						5	0
Tree Cover	12	29%	2	2	2	5	5	2	12.5	30%	2	2	2	5	5	2
Shrub canopy cover	20	95%	5	5	5	5	5	3	40	190%	5	5	5	5	5	3
Native grass cover	3	30%	1	1	3	3	3	1	5	50%	1	1	3	3	3	0
Organic litter	2	6%	0	3	3	3	3	0	26	79%	5	5	5	5	5	3
Large trees	42	30%	5	5	5	5	5	5	42	30%	5	5	5	5	5	5
Coarse woody debris	0	0%	0	2	2	2	5	0	0	0%	0	2	2	2	5	0
Non-native plant cover	6	6%	5	3	3	5	10	0	80	80%	0	3	3	5	10	0
Site Condition Score			41.5	44.5	49	58	66	34.5			46	51	53	58	66	41
MAX Site Condition Score			80	80	80	80	80	80			80	80	80	80	80	80
Site Condition Score - out of 7			3.63	3.89	4.29	5.08	5.78	3.02			4.03	4.46	4.64	5.08	5.78	3.59
Site Context																
Size of patch			10	10	10	10	10	10			10	10	10	10	10	10
Connectedness			5	5	5	5	5	5			5	5	5	5	5	5
Context			4	4	4	4	4	4			4	4	4	4	4	4
Ecological Corridors			6	6	6	6	6	6			6	6	6	6	6	6
Role of site location to TEC overall population in the state			5	5	5	5	5	5			5	5	5	5	5	5
Changed hydrological regime (17%)			7	7	7	7	7	7			7	7	7	7	7	7
Native vegetation clearing (17%)			7	15	15	15	15	7			7	15	15	15	15	7
Fragmentation of remnants and habitats (16%)			1	1	1	1	1	1			1	1	1	1	1	1
Invasive fauna (5%)			7	7	7	15	15	7			7	7	7	15	15	7
Disturbance from urbanisation and recreational activity (10%)			1	7	7	7	7	1			1	7	7	7	7	1
Weed (10%)			7	7	15	15	15	1			7	7	15	15	15	1
Diseases and pathogens (5%)			15	15	15	15	15	15			15	15	15	15	15	15
Grazing pressures (5%)			15	15	15	15	15	15			15	15	15	15	15	15
Increased frequency of Bushfire (15%)			1	1	1	7	7	1			1	1	1	7	7	1
Threats to the species			12.09	14.05	14.85	16.15	16.15	11.49			12.09	14.05	14.85	16.15	16.15	11.49
Site Context Score			42.09	44.05	44.85	46.15	46.15	41.49			42.09	44.05	44.85	46.15	46.15	41.49
MAX Site Context Score			46	46	46	46	46	46			46	46	46	46	46	46
Site Context Score - out of 3			2.75	2.87	2.93	3.01	3.01	2.71			2.75	2.87	2.93	3.01	3.01	2.71

Assessment Unit	AU4							
Site Reference	B10							
Site Condition	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)
Recruitment of woody perennial species in EDL	33.3	33%	3	3	3	5	5	3
Native plant species richness - trees	6	120%	5	5	5	5	5	5
Native plant species richness - shrubs	9	129%	5	5	5	5	5	5
Native plant species richness - grasses	1	100%	5	5	5	5	5	5
Native plant species richness - forbs	8	73%	2.5	2.5	3	5	5	2.5
Tree canopy height	3							
Subcanopy height	0							
Tree Height	1.5	12%	0	3	3	5	0	0
Tree canopy cover	31.15							
Subcanopy cover	0							
Tree Cover	15.575	37%	2	2	2	5	5	2
Shrub canopy cover	7.4	35%	3	3	5	5	5	3
Native grass cover	33.5	335%	5	5	5	5	5	1
Organic litter	9	27%	3	3	3	3	3	3
Large trees	2	1%	5	5	5	5	5	5
Coarse woody debris	0	0%	0	2	2	2	2	0
Non-native plant cover	50	50%	3	10	10	10	10	0
Site Condition Score			41.5	53.5	56	65	60	34.5
MAX Site Condition Score			80	80	80	80	80	80
Site Condition Score - out of 7			3.63	4.68	4.90	5.69	5.25	3.02
Site Context								
Size of patch			10	10	10	10	10	10
Connectedness			5	5	5	5	5	5
Context			4	4	4	4	4	4
Ecological Corridors			6	6	6	6	6	6
Role of site location to TEC overall population in the state			5	5	5	5	5	5
Changed hydrological regime (17%)			7	7	7	7	7	7
Native vegetation clearing (17%)			7	15	15	15	15	7
Fragmentation of remnants and habitats (16%)			1	1	1	1	1	1
Invasive fauna (5%)			7	7	7	7	15	7
Disturbance from urbanisation and recreational activity (10%)			1	1	1	1	15	1
Weed (10%)			7	7	7	7	15	7
Diseases and pathogens (5%)			15	15	15	15	15	15
Grazing pressures (5%)			15	15	15	15	15	15
Increased frequency of Bushfire (15%)			1	1	1	1	1	1
Threats to the species			12.09	13.45	13.45	13.45	16.05	12.09
Site Context Score			42.09	43.45	43.45	43.45	46.05	42.09
MAX Site Context Score			46	46	46	46	46	46
Site Context Score - out of 3			2.75	2.83	2.83	2.83	3.00	2.75

Current score

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	5.16	3.76		
Site Context Score (out of 3)	2.75	2.75		
Habitat Quality score (out of 10)	7.91	6.51		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	3.65	3.50	7.15	7.00

5 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	5.16	4.35		
Site Context Score (out of 3)	3.02	2.86		
Habitat Quality score (out of 10)	8.18	7.21		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	3.78	3.88	7.66	8.00

10 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	5.16	4.61		
Site Context Score (out of 3)	2.93	2.89		
Habitat Quality score (out of 10)	8.09	7.50		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	3.73	4.04	7.77	8.00

15 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	5.36	5.28		
Site Context Score (out of 3)	3.10	2.95		
Habitat Quality score (out of 10)	8.46	8.23		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	3.90	4.43	8.33	8.00

20 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	5.58	5.60		
Site Context Score (out of 3)	3.10	3.01		
Habitat Quality score (out of 10)	8.68	8.61		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	4.01	4.63	8.64	9.00

No offset

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	2.87	3.21		
Site Context Score (out of 3)	2.48	2.72		
Habitat Quality score (out of 10)	5.35	5.93		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	2.47	3.19	5.66	6.00

OFFSET - KOALA Species

Assessment Unit	AU3																
Site Reference	B.mark	Site B01								Site B03							
Site Condition	12.3.4	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)
Recruitment of woody perennial species in EDL	100	100	100%	5	5	5	5	5	5	50	50%	3	3	3	5	5	3
Native plant species richness - trees	5	3	60%	2.5	2.5	2.5	5	5	2.5	2	40%	2.5	2.5	2.5	2.5	5	2.5
Native plant species richness - shrubs	7	10	143%	5	5	5	5	5	5	15	214%	5	5	5	5	5	5
Native plant species richness - grasses	1	1	100%	5	5	5	5	5	5	3	300%	5	5	5	5	5	5
Native plant species richness - forbes	11	11	100%	5	5	5	5	5	5	10	91%	5	5	5	5	5	5
Tree canopy height	17	11								15							
Subcanopy height	9	8								0							
Tree Height	13	9.5	73%	5	5	5	5	5	5	7.5	58%	3	3	3	3	3	3
Tree canopy cover	59	10	17%	2						15	25%	2					
Subcanopy cover	25	45	180%	5						0	0%	0					
Tree Cover	42	27.5	65%	5	5	5	5	5	5	7.5	18%	2	2	2	2	5	2
Shrub canopy cover	21	42.5	202%	3	3	3	3	5	0	60	286%	3	3	3	3	5	0
Native grass cover	10	33.5	335%	5	5	5	5	5	1	61	610%	5	5	5	5	5	1
Organic litter	33	48.5	147%	5	5	5	5	5	5	20	61%	5	5	5	5	5	5
Large trees	141	10	7%	5	5	5	5	5	5	24	17%	5	5	5	5	5	5
Coarse woody debris	508	225	44%	2	2	2	2	5	2	88	17%	2	2	2	2	5	2
Non-native plant cover	0	0	0%	10	10	10	10	10	3	0	0%	10	10	10	10	10	3
Abundance of locally important koala habitat trees (LIKT) combined		4			4	4	6	6	4	4			4	4	6	6	4
Large trees (20%)		5			5	5	5	10	5	5			5	5	5	10	5
Quality and availability of food and foraging habitat				4.2	4.2	4.2	5.8	6.8	4.2			4.2	4.2	4.2	5.8	6.8	4.2
Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree)		4			4	4	6	6	4	4			4	4	6	6	4
Large trees (20%)		5			5	5	5	10	5	5			5	5	5	10	5
Quality and availability of shelter				4.2	4.2	4.2	5.8	6.8	4.2			4.2	4.2	4.2	5.8	6.8	4.2
Site Condition Score				70.9	70.9	70.9	76.6	83.6	56.9			63.9	63.9	63.9	69.1	81.6	49.9
MAX Site Condition Score				100	100	100	100	100	100			100	100	100	100	100	100
Site Condition Score - out of 3				2.13	2.13	2.13	2.30	2.51	1.71			1.92	1.92	1.92	2.07	2.45	1.50
Site Context																	
Size of patch				10	10	10	10	10	10			10	10	10	10	10	10
Connectedness				5	5	5	5	5	5			5	5	5	5	5	5
Context				4	4	4	4	4	4			4	4	4	4	4	4
Ecological Corridors				6	6	6	6	6	6			6	6	6	6	6	6
Role of site location to species overall population in the state				5	5	5	5	5	5			5	5	5	5	5	5
Area occupied by predators (i.e. dogs) or vehicles (33.34%)				7	7	7	15	15	7			7	7	7	15	15	7
Broadscale clearing/fragmentation or selective removal of canopy trees (33.33%)				1	15	15	15	15	15			1	15	15	15	15	15
Increased frequency of Bushfire (33.33%)				1	1	1	7	7	1			1	1	1	7	7	1
Threats to the species				5	8	8	12	12	5			5	8	8	12	12	5
Species mobility capacity				7	7	7	7	7	7			7	7	7	7	7	7
Site Context Score				42	44.67	44.67	49.33	49.33	42.00			42.00	44.67	44.67	49.33	49.33	42
MAX Site Context Score				56	56	56	56	56	56			56	56	56	56	56	56
Site Context Score - out of 3				2.25	2.39	2.39	2.64	2.64	2.25			2.25	2.39	2.39	2.64	2.64	2.25

Assessment Unit	AU4															
Site Reference	Site B02					Site B06										
Site Condition	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)
Recruitment of woody perennial species in EDL	50	50%	3	3	5	5	5	3	100	100%	5	5	5	5	5	5
Native plant species richness - trees	2	40%	2.5	2.5	3	5	5	2.5	5	100%	5	5	5	5	5	5
Native plant species richness - shrubs	8	114%	5	5	5	5	5	5	13	186%	5	5	5	5	5	5
Native plant species richness - grasses	2	200%	5	5	5	5	5	5	3	300%	5	5	5	5	5	5
Native plant species richness - forbes	23	209%	5	5	5	5	5	5	13	118%	5	5	5	5	5	5
Tree canopy height	9								12							
Subcanopy height	9								0							
Tree Height	9	69%	3	5	5	5	5	3	6	46%	3	5	5	5	5	3
Tree canopy cover	24	41%	2						25	42%	2					
Subcanopy cover	0	0%	0						0	0%	0					
Tree Cover	12	29%	2	2	2	5	0	2	12.5	30%	2	2	2	5	0	2
Shrub canopy cover	20	95%	5	5	5	5	5	3	40	190%	5	5	5	5	5	3
Native grass cover	3	30%	1	1	3	3	3	1	5	50%	1	1	3	3	3	0
Organic litter	2	6%	0	3	3	3	3	0	26	79%	5	5	5	5	5	3
Large trees	42	30%	5	5	5	5	5	5	42	30%	5	5	5	5	5	5
Coarse woody debris	0	0%	0	2	2	2	5	0	0	0%	0	2	2	2	5	0
Non-native plant cover	6	60%	0	3	3	5	10	0	80	80%	0	3	3	5	10	0
Abundance of locally important koala habitat trees (L	4			4	4	6	6	4	4			4	4	6	6	4
Large trees (20%)	5			5	5	5	10	5	5			5	5	5	10	5
Quality and availability of food and foraging habitat			4.2	4.2	4.2	5.8	6.8	4.2			4.2	4.2	4.2	5.8	6.8	4.2
Cover of suitable Koala shelter trees (LIKT or Ancilla	7			7	7	7	7	7	7			7	7	7	7	4
Large trees (20%)	5			5	5	5	5	5	5			5	5	5	5	5
Quality and availability of shelter			6.6	6.6	6.6	6.6	6.6	6.6			6.6	6.6	6.6	6.6	6.6	4.2
Site Condition Score			47.3	57.3	61.8	70.4	74.4	45.3			56.8	63.8	65.8	72.4	76.4	49.4
MAX Site Condition Score			100	100	100	100	100	100			100	100	100	100	100	100
Site Condition Score - out of 3			1.42	1.72	1.85	2.11	2.23	1.36			1.70	1.91	1.97	2.17	2.29	1.48
Site Context																
Size of patch			10	10	10	10	10	6			10	10	10	10	10	6
Connectedness			5	5	5	5	5	5			5	5	5	5	5	5
Context			4	4	4	4	4	7			4	4	4	4	4	7
Ecological Corridors			6	6	6	6	6	7			6	6	6	6	6	7
Role of site location to species overall population in the state			5	5	5	5	5	1			5	5	5	5	5	1
Area occupied by predators (i.e. dogs) or vehicles (33.34%)			7	7	7	15	15	7			7	7	7	15	15	7
Broadscale clearing/fragmentation or selective removal of canopy trees (33.33%)			7	15	15	15	15	7			7	15	15	15	15	7
Increased frequency of Bushfire (33.33%)			1	1	1	7	7	1			1	1	1	7	7	1
Threats to the species			5	8	8	12	12	5			5	8	8	12	12	5
Species mobility capacity			7	7	7	7	7	7			7	7	7	7	7	7
Site Context Score			42	44.67	44.67	49.33	49.33	38.00			42.00	44.67	44.67	49.33	49.33	38.00
MAX Site Context Score			56	56	56	56	56	56			56	56	56	56	56	56
Site Context Score - out of 3			2.25	2.39	2.39	2.64	2.64	2.04			2.25	2.39	2.39	2.64	2.64	2.04

Assessment Unit	AU4								
Site Reference	B10								
Site Condition	Raw Data	% B.mark	Score	Future score with offset (5 yrs)	Future score with offset (10 yrs)	Future score with offset (15 yrs)	Future score with offset (20 yrs)	Future score without offset (20 yrs)	
Recruitment of woody perennial species in EDL	33.3	33%	3	3	3	5	5	3	
Native plant species richness - trees	6	120%	5	5	5	5	5	5	
Native plant species richness - shrubs	9	129%	5	5	5	5	5	5	
Native plant species richness - grasses	1	100%	5	5	5	5	5	5	
Native plant species richness - forbes	8	73%	2.5	2.5	3	5	5	2.5	
Tree canopy height	3								
Subcanopy height	0								
Tree Height	1.5	12%	0	5	5	5	5	0	
Tree canopy cover	31.15	53%	5						
Subcanopy cover	0	0%	0						
Tree Cover	15.575	37%	2	2	2	5	5	2	
Shrub canopy cover	7.4	35%	3	3	5	5	5	3	
Native grass cover	64.4	644%	5	5	5	5	5	1	
Organic litter	9	27%	3	3	3	3	3	3	
Large trees	2	1%	5	5	5	5	5	5	
Coarse woody debris	0	0%	0	2	2	2	2	0	
Non-native plant cover	50	50%	3	10	10	10	10	0	
Abundance of locally important koala habitat trees (L	4			4	4	6	6	4	
Large trees (20%)	5			5	5	5	10	5	
Quality and availability of food and foraging habitat			4.2	4.2	4.2	5.8	6.8	4.2	
Cover of suitable Koala shelter trees (LIKT or Ancilla	7			7	7	7	7	4	
Large trees (20%)	5			5	5	5	5	5	
Quality and availability of shelter			6.6	6.6	6.6	6.6	6.6	4.2	
Site Condition Score			52.3	66.3	68.8	77.4	78.4	42.9	
MAX Site Condition Score			100	100	100	100	100	100	
Site Condition Score - out of 3			1.57	1.99	2.06	2.32	2.35	1.29	
Site Context									
Size of patch			10	10	10	10	10	6	
Connectedness			5	5	5	5	5	5	
Context			4	4	4	4	4	7	
Ecological Corridors			6	6	6	6	6	7	
Role of site location to species overall population in the state			5	5	5	5	5	1	
Area occupied by predators (i.e. dogs) or vehicles (33.34%)			7	7	7	7	7	7	
Broadscale clearing/fragmentation or selective removal of canopy trees (33.33%)			7	15	15	15	15	15	
Increased frequency of Bushfire (33.33%)			1	1	1	7	7	1	
Threats to the species			5	7.67	7.67	9.67	9.67	7.67	
Species mobility capacity			7	7	7	7	7	7	
Site Context Score			42	44.67	44.67	46.67	46.67	40.67	
MAX Site Context Score			56	56	56	56	56	56	
Site Context Score - out of 3			2.25	2.39	2.39	2.50	2.50	2.18	

Species Stocking Rate (SSR)					Site score
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5	10	5
		No	Yes - adjacent	Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15
		Not habitat	Dispersal	Foraging	Breeding
Approximate density (per ha)	Score	0	10	20	30
		0			
Role/importance of species population on site*	Score (Total from supplementary table below)	0	5	10	15
		0	5 - 15	20 - 35	40 - 45
Total SRR score (out of 70)					20
SRR Score (out of 4)					1.14

*SSR Supplementary Table			Score
*Key source population for breeding	Score	0	10
		No	Yes/Possibly
*Key source population for dispersal	Score	0	5
		No	Yes/Possibly
*Necessary for maintaining genetic diversity	Score	0	15
		No	Yes/Possibly
*Near the limit of the species range	Score	0	15
		No	Yes

Final habitat quality score (weighted)	AU3	AU4	Final
Site Condition score (out of 3)	2.02	1.56	
Site Context Score (out of 3)	2.25	2.25	
Species Stocking Rate Score (out of 4)	1.14	1.14	
Habitat Quality score (out of 10)	5.41	4.96	
Assessment Unit area (ha)	8.56	9.98	
Total offset area (ha) for this MNES	18.54	18.54	
Size Weighting	0.46	0.54	rounded
Weighted Habitat Quality Score	2.50	2.67	5.17 5.00

5 years

Final habitat quality score (weighted)	AU3	AU4	Final
Site Condition score (out of 7)	2.02	1.87	
Site Context Score (out of 3)	2.39	2.26	
Species Stocking Rate Score (out of 4)	1.14	1.14	
Habitat Quality score (out of 10)	5.56	5.28	
Assessment Unit area (ha)	8.56	9.98	
Total offset area (ha) for this MNES	18.54	18.54	
Size Weighting	0.46	0.54	Rounded
Weighted Habitat Quality Score	2.57	2.84	5.41 5.00

10 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	2.02	1.96		
Site Context Score (out of 3)	2.39	2.39		
Species Stocking Rate Score (out of 4)	1.14	1.14		
Habitat Quality score (out of 10)	5.56	5.50		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	2.57	2.96	5.53	6.00

15 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	2.19	2.20		
Site Context Score (out of 3)	2.64	2.60		
Species Stocking Rate Score (out of 4)	1.14	1.14		
Habitat Quality score (out of 10)	5.97	5.94		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	2.76	3.20	5.95	6.00

20 years

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	2.48	2.29		
Site Context Score (out of 3)	2.64	2.60		
Species Stocking Rate Score (out of 4)	1.14	1.14		
Habitat Quality score (out of 10)	6.26	6.03		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	2.89	3.25	6.14	6.00

No offset

Final habitat quality score (weighted)	AU3	AU4	Final	
Site Condition score (out of 7)	1.60	1.38		
Site Context Score (out of 3)	2.04	2.08		
Species Stocking Rate Score (out of 4)	1.14	1.14		
Habitat Quality score (out of 10)	3.64	3.46		
Assessment Unit area (ha)	8.56	9.98		
Total offset area (ha) for this MNES	18.54	18.54		
Size Weighting	0.46	0.54		Rounded
Weighted Habitat Quality Score	1.68	1.86	3.54	4.00

Raw Data Impact Site

AU BioCondition Survey	AU1			AU2			AU2		
	B05			B07			B12		
	Benchmark	Raw Data	Percentage		Raw Data	Percentage	Benchmark	Raw Data	Percentage
RE	12.9-10.14			12.2.7			12.2.7		
Broad condition status	Remnant			Remnant			Remnant		
Recruitment	100	100	100%	100	75	75%	100	33	33%
Native plant species richness - trees	5	7	100%	3	3	100%	3	12	400%
Native plant species richness - shrubs	7	23	192%	4	21	525%	4	3	75%
Native plant species richness - grasses	1	2	33%	3	2	67%	3	1	33%
Native plant species richness - forbes	11	24	150%	12	22	183%	12	9	75%
Tree canopy height	17	30	91%	14	18	129%	14	18	129%
Subcanopy Height	9	18	113%	9	10	111%	9	0	0%
Tree canopy cover	59	60	88%	60	40	67%	60	74	123%
Subcanopy Cover	25	20	154%	21	25	119%	21	0	0%
Shrub canopy cover	21	20	143%	15	50	333%	15	1	5%
Native grass cover	10	8	22%	15	40.5	270%	15	2	13%
Organic litter	33	42	168%	30	46	153%	30	44	148%
Large trees /0.5ha	-	68	-	-	58	-	-	104	-
Large trees /ha	141	136	272%	125	116	93%	125	208	166%
Coarse woody debris /0.1 ha	-	56.5	-	-	79	-	-	0	-
Coarse woody debris /ha	508	565	107%	900	790	88%	900	0	0%
Non-native plant cover	0	10	-	0	0	-	0	70	
LIKT percentage of canopy	-	100%	-		50%			0.1	
Ancillary habitat trees percentage of canopy	-	0%	-		50%			0.9	
LIKT canopy cover		60			20			7.4	
LIKT and ancillary cover		60			40			8.3	

Raw Data Offset Site

AU BioCondition Survey	Benchmark	AU3		AU3		AU4		AU4		AU4	
		B01		B03		B02		B06		B10	
		Raw Data	Percentage								
RE	12.3.4	12.3.4		12.3.4		12.3.4		12.3.4		12.3.4	
Broad condition status		Regrowth		Regrowth		Regrowth		Regrowth		Regrowth	
Recruitment	100	100	100%	50	50%	50	50%	100	100%	33.3	33%
Native plant species richness - trees	5	3	60%	2	40%	2	40%	5	100%	6	120%
Native plant species richness - shrubs	7	10	143%	15	214%	8	114%	13	186%	9	129%
Native plant species richness - grasses	1	1	100%	3	300%	2	200%	3	300%	1	100%
Native plant species richness - forbes	11	11	100%	10	91%	23	209%	13	118%	8	73%
Tree canopy height	17	11	65%	15	88%	9	53%	12	71%	3	18%
Subcanopy Height	9	8	89%	0	0%	9	100%	0	0%	0	0%
Tree canopy cover	59	10	17%	15	25%	24	41%	25	42%	31.15	53%
Subcanopy Cover	25	45	180%	0	0%	0	0%	0	0%	0	0%
Shrub canopy cover	21	42.5	202%	60	286%	20	95%	40	190%	7.4	35%
Native grass cover	10	33.5	335%	61	610%	3	30%	5	50%	33.5	335%
Organic litter	33	48.5	147%	20	61%	2	6%	26	79%	9	27%
Large trees /0.5ha		5	-	12	-	21	-	21	-	1	-
Large trees /ha	141	10	7%	24	17%	42	30%	42	30%	2	1%
Coarse woody debris /0.1 ha		22.5	-	8.8	-	0	-	0	-	0	-
Coarse woody debris /ha	508	225	44%	88	17%	0	0%	0	0%	0	0%
Non-native plant cover	0	0	-	0	-	6	-	80	-	50	-
LIKt percentage of canopy	-	5%	-	5%	-	0%	-	0%	-	10%	-
Ancillary habitat trees percentage of canopy	-	95%	-	95%	-	100%	-	100%	-	90%	-
LIKt canopy cover		0.5		0.75		0		0		3.115	
LIKt and ancillary cover		10		15		24		25		31.15	

Raw Data Impact Site

AU BioCondition Survey	AU5			AU6		
	B04			B11		
	Benchmark	Raw Data	Percentage	Benchmark	Raw Data	Percentage
RE	12.3.1a			12.3.1a		
Broad condition status	Remnant			Regrowth		
Recruitment	100	60	60%	100	25	25%
Native plant species richness - trees	11	7	64%	11	28	255%
Native plant species richness - shrubs	17	20	118%	17	8	47%
Native plant species richness - grasses	1	0	0%	1	0	0%
Native plant species richness - forbes	16	21	131%	16	5	31%
Tree canopy height	28	25	89%	28	15.2	54%
Subcanopy Height	8	16	200%	8	0	0%
Tree canopy cover	80	70	88%	80	57	71%
Subcanopy Cover	40	30	75%	40	0	0%
Shrub canopy cover	28	40	143%	28	0.35	1%
Native grass cover	1	0	0%	1	1	100%
Organic litter	30	37	123%	30	33	110%
Large trees /0.5ha	-	42	-	-	10	-
Large trees /ha	150	84	56%	150	20	13%
Coarse woody debris /0.1 ha	-	52	-	-	0	-
Coarse woody debris /ha	295	520	176%	295	0	0%
Non-native plant cover	0	0	-	0	63	-
LIKt percentage of canopy			-		5%	
Ancillary habitat trees percentage of canopy			-		90%	
LIKt canopy cover			-		2.85	
LIKt and ancillary cover			-		54.15	

IMPACT- Threatened Ecological Community CSSF

AU	AU2				AU2			
Site reference	B.mark	B07			B.mark	B12		
Site Condition	12.2.7	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% Benchmark	Score
Recruitment of woody perennial species in EDL	100	75	75%	3	100	33.3	33%	3
Native plant species richness - trees	3	3	100%	5	3	12	400%	5
Native plant species richness - shrubs	4	21	525%	5	4	3	75%	2.5
Native plant species richness - grasses	3	2	67%	2.5	3	1	33%	2.5
Native plant species richness - forbs	12	22	183%	5	12	9	75%	2.5
Tree canopy height (average of emergent, canopy and sub-canopy)	14	18			14	18		
Subcanopy height	9	10			9	0		
Tree Height	11.5	14	122%	5	11.5	9	78%	5
Tree canopy cover (average of emergent, canopy and sub-canopy)	60	40			60	73.5		
Subcanopy cover	21	25			21	0		
Tree Cover	40.5	32.5	80%	5	40.5	36.75	91%	5
Shrub canopy cover	15	50	333%	3	15	0.8	5%	0
Native grass cover	15	40.5	270%	5	15	2	13%	1
Organic litter	30	46	153%	5	30	44.4	148%	5
Large trees	125	116	93%	10	125	208	166%	15
Coarse woody debris	900	790	88%	5	900	0	0%	0
Non-native plant cover	0	0	0%	10	0	70	0%	0
Site Condition Score				68.5				46.5
MAX Site Condition Score				80				80
Site Condition Score - out of 7				5.99				4.07

CSSF cont.	AU2				AU2			
	B.mark	B07			B.mark	B12		
Site reference	12.2.7	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% Benchmark	Score
Site Condition								
Site Context & Species/TEC habitat index								
Size of patch				2				2
Connectedness				2				2
Context				2				2
Ecological Corridors				6				6
Role of site location to TEC overall population in the state				5				5
Changed hydrological regime (17%)				15				15
Native vegetation clearing (17%)				7				7
Fragmentation of remnants and habitats (16%)				7				15
Invasive fauna (5%)				15				15
Disturbance from urbanisation and recreational activity (10%)				1				1
Weed (10%)				7				1
Diseases and pathogens (5%)				7				7
Grazing pressures (5%)				15				15
Increased frequency of Bushfire (15%)				7				15
Threats to the species	15			7.44				8.04
Site Context Score				24.44				25.04
MAX Site Context Score				46				46
Site Context Score - out of 3				1.59				1.63

Final habitat quality score (weighted)	AU2	Final
Biocondition	B07	
Site Condition score (out of 7)	5.03	
Site Context Score (out of 3)	1.61	
Habitat Quality score (out of 10)	6.64	
Assessment Unit area (ha) in disturbance footprint	1.43	
Total impact area (ha) for this MNES	1.43	
Size Weighting	1.00	
Final score	6.64	6.64

Assessment Unit - Regional Ecosystem	AU1				AU2				AU3				AU6			
Site Reference	B.mark	B05			B.mark	B07			B.mark	B12			B.mark	B11		
	12.9-10.14	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% Benchmark	Score	12.3.1a	Raw Data	% Benchmark	Score
Recruitment of woody perennial species in EDL	100	100	100%	5	100	75	75%	5	100	33.3	33%	3	100	25	25%	3
Native plant species richness - trees	7	7	100%	5	3	3	100%	5	3	12	400%	5	11	28	255%	5
Native plant species richness - shrubs	12	23	192%	5	4	21	525%	5	4	3	75%	2.5	17	8	47%	2.5
Native plant species richness - grasses	6	2	33%	2.5	3	2	67%	2.5	3	1	33%	2.5	1	0	0%	0
Native plant species richness - forbes	16	24	150%	5	12	22	183%	5	12	9	75%	2.5	16	5	31%	2.5
Tree canopy height	33	30			14	18			14	18			28	15.2		
Subcanopy height	16	18			9	10			9	0			8	0		
Tree Height	24.5	24	98%	5	11.5	14	122%	5	11.5	9	78%	5	18	7.6	42%	3
Tree canopy cover	68	60			60	40			60	73.5			80	57		
Subcanopy cover	13	20			21	25			21	0			40	0		
Tree Cover	40.5	40	99%	5	40.5	32.5	80%	5	40.5	36.75	91%	5	60	28.5	48%	2
Shrub canopy cover	14	20	143%	5	15	50	333%	3	15	0.8	5%	0	28	0.35	1%	0
Native grass cover	36	8	22%	1	15	40.5	270%	5	15	2	13%	1	1	1	100%	5
Organic litter	25	42	168%	5	30	46	153%	5	30	44.4	148%	5	30	33	110%	5
Large trees (euc plus non-euc)	50	136	272%	15	125	116	93%	15	125	208	166%	15	150	20	13%	5
Coarse woody debris	527	565	107%	5	900	790	88%	5	900	0	0%	0	295	0	0%	0
Non-native plant cover		10	10%	5		0	0%	10		70	70%	0		63	63%	0
Abundance of locally important koala habitat trees (LIKT) combined cover (sub-canopy, canopy, emergent)		10				6				4				4		
Large trees		5				10				10				5		
Quality and availability of food and foraging habitat				9				6.8				5.2				4.2
Cover of suitable Koala shelter trees (LIKT or Ancillary habitat tree) ≥10 cm DBH within assessment area		10				7				4				4		
Large trees		5				10				10				5		
Quality and availability of shelter				9				7.6				5.2				4.2
Site Condition Score				86.5				89.9				56.9				41.4
MAX Site Condition Score				100				100				100				100
Site Condition Score - out of 3				2.60				2.70				1.71				1.24

Koala cont.	AU1				AU2				AU2				AU6			
Site Reference	B.mark	B05			B.mark	B07			B.mark	B12			B.mark	B11		
	12.9-10.14	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% Benchmark	Score	12.2.7	Raw Data	% B.mark	Score	12.3.1a	Raw Data	% B.mark	Score
Site Context																
Size of patch				2				2				2	10			0
Connectedness				2				2				2	5			0
Context				2				2				2	5			2
Ecological Corridors				6				6				6				6
Role of site location to species overall population in the state				5				5				5				5
Area occupied by predators (i.e. dogs) or vehicles (30%)				1				1				1				1
Broadscale clearing/fragmentation or selective removal of canopy trees (30%)				7				7				7				7
Increased frequency of Bushfire (20%)				7				7				15				15
Threats to the species				5				5				7.667				7.667
Species mobility capacity				4				4				4				4
Site Context Score				26				26				28.667				24.667
MAX Site Context Score				56				56				56				46
Site Context Score - out of 3				1.39				1.39				1.54				1.61

Species Stocking Rate (SSR)					
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5	10	0
		No	Yes - adjacent	Yes - on site	
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15
		Not habitat	Dispersal	Foraging	Breeding
Approximate density (per ha)	Score	0	10	20	30
		0%			
Role/importance of species population on site*	Score	0	5	10	15
	(Total from	0	5 - 15	20 - 35	40 - 45
Total SRR score (out of 70)					25
SRR Score (out of 4)					1.43

Koala cont.

*SSR Supplementary Table				
*Key source population for breeding	Score	0	10	0
		No	Yes/ Possibly	
*Key source population for dispersal	Score	0	5	0
		No	Yes/ Possibly	
*Necessary for maintaining genetic diversity	Score	0	15	0
		No	Yes/ Possibly	
*Near the limit of the species range	Score	0	15	0
		No	Yes	

Final habitat quality score (weighted)	AU1	AU2	AU6	
Site Condition score (out of 3)	2.60	2.20	1.24	5.10
Site Context Score (out of 3)	1.39	1.46	1.61	
Species Stocking Rate Score (out of 4)	1.43	1.43	1.43	
Habitat Quality score (out of 10)	5.42	5.09	4.28	
Assessment Unit area (ha) in disturbance footprint	2.31	1.43	0.91	
Total impact area (ha) for this MNES	4.65	4.65	4.65	
Size Weighting	0.50	0.31	0.20	
Weighted Habitat Quality Score	2.69	1.57	0.84	

REC 1 - 10

Card No.	Photo No.	Animal ID
102REC\	13	Wallaby
102REC\	14	Wallaby
102REC\	15	Wallaby
102REC\	18	Wallaby
102REC\	19	Wallaby
102REC\	20	Wallaby
102REC\	21	Wallaby
102REC\	22	Wallaby
102REC\	23	Wallaby
102REC\	24	Wallaby
102REC\	28	Wallaby
102REC\	31	Wallaby
102REC\	32	Wallaby
102REC\	33	Wallaby
102REC\	49	Wallaby
102REC\	50	Wallaby
102REC\	51	Wallaby
102REC\	52	Wallaby
102REC\	53	Wallaby
102REC\	54	Wallaby
102REC\	76	Wallaby
102REC\	83	Wallaby
102REC\	84	Wallaby
102REC\	93	Wallaby
102REC\	94	Wallaby
102REC\	160	Wallaby
102REC\	161	Wallaby
102REC\	169	Wallaby
102REC\	172	Wallaby
102REC\	175	Fox
102REC\	176	Fox
102REC\	177	Fox
102REC\	181	Lace Mon

REC 2 - 10

Card No.	Photo No.	Animal ID	File Type
100REC\	25	Lace Mon	JPEG
100REC\	26	Lace Mon	JPEG
100REC\	27	Lace Mon	JPEG
100REC\	28	Lace Mon	AVI
100REC\	29	Lace Mon	JPEG
100REC\	30	Lace Mon	JPEG
100REC\	31	Lace Mon	JPEG
100REC\	32	Lace Mon	AVI
100REC\	37	Lace Mon	JPEG
100REC\	38	Lace Mon	JPEG
100REC\	39	Lace Mon	JPEG
100REC\	40	Lace Mon	AVI
100REC\	41	Lace Mon	JPEG
100REC\	42	Lace Mon	JPEG
100REC\	43	Lace Mon	JPEG
100REC\	44	Lace Mon	AVI
100REC\	46	Lace Mon	JPEG
100REC\	47	Lace Mon	JPEG
100REC\	48	Lace Mon	AVI
100REC\	49	Lace Mon	JPEG
100REC\	50	Lace Mon	JPEG
100REC\	51	Lace Mon	JPEG
100REC\	52	Lace Mon	AVI
100REC\	53	Lace Mon	JPEG
100REC\	54	Lace Mon	JPEG
100REC\	55	Lace Mon	JPEG
100REC\	56	Lace Mon	AVI
100REC\	62	Bar Shoul	JPEG
100REC\	63	Bar Shoul	JPEG
100REC\	64	Bar Shoul	AVI
100REC\	65	Bar Shoul	JPEG
100REC\	66	Bar Shoul	JPEG
100REC\	67	Bar Shoul	JPEG

REC 3 - 10

Card No.	Photo No.	Animal ID	File Type
100REC\	31	Cane toad	JPEG
100REC\	32	Cane toad	AVI
100REC\	35	Cane toad	JPEG
100REC\	36	Cane toad	AVI
100REC\	36	Bar shoul	AVI
100REC\	75	Fox	JPEG
100REC\	76	Fox	AVI
100REC\	79	Lace mon	JPEG
100REC\	80	Lace mon	AVI
100REC\	83	Brush turk	JPEG
100REC\	84	Brush turk	AVI
100REC\	86-87	Northern	JPEG
100REC\	91	Brush turk	JPEG
100REC\	92	Brush turk	AVI
100REC\	95	Brush turk	JPEG
100REC\	96	Brush turk	AVI
100REC\	99	Brush turk	JPEG
100REC\	100	Brush turk	AVI
100REC\	103	Swamp ra	JPEG
100REC\	104	Swamp ra	AVI
100REC\	107	Brush turk	JPEG
100REC\	108	Brush turk	AVI
100REC\	111	Brush turk	JPEG
100REC\	112	Brush turk	AVI
100REC\	114	Brush turk	JPEG
100REC\	119	Brush turk	JPEG
100REC\	120	Brush turk	AVI
100REC\	123	Brush turk	JPEG
100REC\	124	Brush turk	AVI
100REC\	127	Brush turk	JPEG
100REC\	128	Brush turk	AVI
100REC\	139	Northern	JPEG
100REC\	140	Northern	AVI

102REC\>	182	Lace Mon
102REC\>	183	Lace Mon
102REC\>	226	Wallaby
102REC\>	227	Wallaby
102REC\>	228	Wallaby
102REC\>	229	Wallaby
102REC\>	230	Wallaby
102REC\>	231	Wallaby
102REC\>	232	Wallaby
102REC\>	238	Wallaby
102REC\>	239	Wallaby
102REC\>	240	Wallaby
102REC\>	243	Wallaby
102REC\>	251	Wallaby
102REC\>	252	Wallaby
102REC\>	253	pheasant
102REC\>	254	pheasant
102REC\>	255	pheasant
102REC\>	277	Wallaby
102REC\>	278	Wallaby
102REC\>		

100REC\>	73	Kangaroo	JPEG
100REC\>	74	Kangaroo	JPEG
100REC\>	75	Kangaroo	JPEG
100REC\>	76	Kangaroo	AVI
100REC\>	97	Cane Toad	JPEG
100REC\>	98	Cane Toad	JPEG
100REC\>	99	Cane Toad	JPEG
100REC\>	100	Cane Toad	AVI
100REC\>	106	Cane Toad	JPEG
100REC\>	107	Cane Toad	JPEG
100REC\>	108	Cane Toad	AVI
100REC\>	109	Red-backe	JPEG
100REC\>	110	Red-backe	JPEG
100REC\>	111	Red-backe	JPEG
100REC\>	112	Red-backe	AVI
100REC\>	118	Female Re	JPEG
100REC\>	119	Female Re	JPEG
100REC\>	120	Female Re	AVI
100REC\>	121	Bush Turk	JPEG
100REC\>	122	Bush Turk	JPEG
100REC\>	123	Bush Turk	JPEG
100REC\>	124	Bush Turk	AVI
100REC\>	125	Lace Mon	JPEG
100REC\>	126	Lace Mon	JPEG
100REC\>	127	Lace Mon	JPEG
100REC\>	128	Lace Mon	AVI
100REC\>	130	Long Nose	JPEG
100REC\>	131	Long Nose	JPEG
100REC\>	132	Long Nose	AVI
100REC\>	133	Lace Mon	JPEG
100REC\>	134	Lace Mon	JPEG
100REC\>	135	Lace Mon	JPEG
100REC\>	136	Lace Mon	AVI
100REC\>	137		JPEG

100REC\>	147	Fox	JPEG
100REC\>	148	Fox	AVI
100REC\>	151	Fox	JPEG
100REC\>	152	Fox	AVI
100REC\>	155	Brush turl	JPEG
100REC\>	156	Brush turl	AVI
100REC\>	159	Brush turl	JPEG
100REC\>	160	Brush turl	AVI
100REC\>	163	Juvenile b	JPEG
100REC\>	164	Juvenile b	AVI

100REC\X	138		JPEG
100REC\X	139		JPEG
100REC\X	140		AVI
100REC\X	141	Female Re	JPEG
100REC\X	142	Female Re	JPEG
100REC\X	143	Female Re	JPEG
100REC\X	144	Female Re	JPEG
100REC\X	153	Lace Mon	JPEG
100REC\X	154	Lace Mon	JPEG
100REC\X	155	Lace Mon	JPEG
100REC\X	156	Lace Mon	AVI
100REC\X	157	Bush Turk	JPEG
100REC\X	158	Bush Turk	JPEG
100REC\X	159	Bush Turk	JPEG
100REC\X	160	Bush Turk	AVI
100REC\X	161	Bush Turk	JPEG
100REC\X	162	Bush Turk	JPEG
100REC\X	163	Bush Turk	JPEG
100REC\X	164	Bush Turk	AVI
100REC\X	165	Bush Turk	JPEG
100REC\X	166	Bush Turk	JPEG
100REC\X	167	Bush Turk	JPEG
100REC\X	170	Bush Turk	JPEG
100REC\X	171	Bush Turk	JPEG
100REC\X	172	Bush Turk	AVI
100REC\X	173	Lace Mon	JPEG
100REC\X	174	Lace Mon	JPEG
100REC\X	175	Lace Mon	JPEG
100REC\X	176	Lace Mon	AVI
100REC\X	177	Lace Mon	JPEG
100REC\X	189	Kangaroo	JPEG
100REC\X	190	Kangaroo	JPEG
100REC\X	191	Kangaroo	JPEG
100REC\X	192	Kangaroo	AVI

100RECNX	196	Kangaroo	AVI
100RECNX	197	Kangaroo	JPEG
100RECNX	198	Kangaroo	JPEG
100RECNX	199	Kangaroo	JPEG
100RECNX	200	Kangaroo	AVI
100RECNX	201	Kangaroo	JPEG
100RECNX	202	Kangaroo	JPEG
100RECNX	203	Kangaroo	JPEG
100RECNX	204	Kangaroo	JPEG
100RECNX	209	Lace Mon	JPEG
100RECNX	210	Lace Mon	JPEG
100RECNX	211	Lace Mon	JPEG
100RECNX	212	Lace Mon	AVI
100RECNX	221	Lace Mon	JPEG
100RECNX	222	Lace Mon	JPEG
100RECNX	223	Lace Mon	JPEG
100RECNX	224	Lace Mon	AVI
100RECNX			

Appendix E

DCCEEW Annual Compliance Report Guidelines
(2023)



Australian Government

Department of Climate Change, Energy,
the Environment and Water

Annual Compliance Report Guidelines

Reporting under the *Environment
Protection and Biodiversity
Conservation Act 1999*



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Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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Introduction

The purpose of this document is to provide guidance to approval holders preparing Annual Compliance Reports required by condition of their *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval. Information about the EPBC Act assessment and approval process is available on the Department of Climate Change, Energy, the Environment and Water's (department's) website at dcceew.gov.au/environment/epbc.

These guidelines provide an overview of the responsibilities of both the approval holder and the role of the department after an approval is issued. They provide guidance on the required content and formatting of the Annual Compliance Report, and a sample compliance table to be included in every Annual Compliance Report.

1.1 Compliance reports prepared to satisfy other regulations or regulatory bodies

The department understands that in addition to meeting EPBC Act obligations, approval holders may need to prepare a compliance report to satisfy the requirements of other regulations or regulatory bodies. Accordingly, the department recognises that the format of Annual Compliance Reports may need to vary, and will accept reports prepared for other regulators providing they include the information specified in these guidelines and the conditions compliance table described in Section 4.1 and Appendix A. The reports must clearly articulate the different requirements included for each regulator.

1.2 Roles and responsibilities

Approval holders are responsible for self-regulation and implementing systems and practices to ensure their actions are compliant with EPBC Act requirements. The department recognises that members of the regulated community will voluntarily comply with legislation if they are provided with the correct guidance and assistance.

1.3 Department's Compliance and Enforcement Branch

The department's Compliance and Environment Branch delivers the compliance and audit regime for approvals issued under the EPBC Act and is responsible for guiding and assisting EPBC approval holders to ensure they meet the obligations set out in an approval. Requests for assistance or clarification are encouraged and must be sent in writing to epbcmonitoring@dcceew.gov.au.

1.4 Service Charter

The [Departmental client service charter](#) sets out the standards of service clients can expect from us, their rights and responsibilities and how to find out more about the department.

1.5 Non-compliance

The department undertakes a range of compliance activities to ensure the regulated community is aware of their obligations under the EPBC Act. When contraventions occur, the EPBC Act provides enforcement options that include a range of criminal and civil penalties, and civil and administrative remedies.

Compliance activities include monitoring inspections, desk top document reviews and compliance audits in accordance with the department's published [Compliance Policy](#). Desktop document reviews are undertaken to determine the status of approvals and compliance with conditions. Approval holders are required to assist with these reviews. Approvals subject to a full compliance audit are chosen via a risk-focussed strategic selection process as part of the audit program. This document is not intended to provide guidance to approval holders directed to undertake a full compliance audit under section 458 of the EPBC Act. Please refer to the [Independent Audit and Audit Report Guidelines](#) for further information.

1.6 Annual Compliance Reports

Annual Compliance Reports help to ensure projects with the potential to impact on matters protected under the EPBC Act are implemented as approved. The reports help the Australian Government to understand how well approval conditions are being understood and implemented, plus they contribute to improving the effectiveness of the department's operations. Further information can be found on the department's website at dcceew.gov.au/environment/epbc/compliance/audits

Under the EPBC Act, approval holders must maintain accurate records of all activities associated with or relevant to the conditions of approval so that they can be made available to the department on request. Such documents may be subject to audit and used to verify compliance. In some cases, this requirement may be added as a condition attached to an approval.

1.7 Compliance Policy

The department's approach to compliance is set out in its published Compliance Policy, which is available on its website at: dcceew.gov.au/about/commitment/compliance-policy

Approval holders must self-report potential non-compliances upon becoming aware of them or in accordance with the conditions of approval. Self-reporting enables the department to address and assist with instances of non-compliance early and may help to prevent the issue from becoming more severe. In some cases, this requirement may be added as a condition attached to an approval.

Format of the Annual Compliance Report

2.1 General

Each page of the Annual Compliance Report must include the EPBC approval number, the name of the project, the date of the report and sequential page numbering. Reports are to be submitted to the department via email to epbcmonitoring@dcceew.gov.au. If your report exceeds the allowable size for email attachments, please contact the department at the above email to arrange an alternate submission method. Submissions must be titled 'Annual Compliance Report' with the project name and EPBC approval number. The time period of the report must be clearly stated (e.g., 10 October 2023 to 9 October 2024).

2.2 Digital requirements

The department uses an electronic document management system. The complete report (text, figures, and appendices) must be supplied as an Adobe Acrobat PDF file. At a minimum, the PDF document is to be bookmarked to the major components (e.g., contents, main report, and appendices). Where this is not possible, the department will accept individual components in common formats. Where individual digital components are supplied, please provide a file list and the corresponding report reference.

Electronic data will be accepted via email or via online storage services with prior arrangement.

2.3 Revised reports

The department may request that an Annual Compliance Report be revised and resubmitted. A resubmitted report must be accompanied by an electronic copy of the document showing tracked changes from the previous report.

2.4 Requirements for maps, plans and attachments

All maps, plans and attachments must conform to the following standards.

Scale – An appropriate standard metric scale must be chosen to best represent the information required (e.g., 1:25 000, 1:10 000 and 1:5000).

Datum – Plans and cross sections must refer to Australian Height Datum.

Title Block – Plans must have a title block in the lower right-hand corner of the sheet with the following information:

- EPBC number and project name
- title and number of the plan
- author
- scale
- date.

Legend – Plans must have a clear and comprehensive legend to identify the symbols and colours used.

Maps, plans, figures, images, and attachments must:

- use metric measurements throughout
- show a graphic bar scale
- show any local grid lines and standards
- have a north point or orientation of sections
- include a key.

2.5 Delivery address

Compliance reports must be titled 'Annual Compliance Report' with the project name and EPBC approval number, clearly labelled beneath the title.

Annual Compliance Reports must be forwarded to epbcmonitoring@dcceew.gov.au.

The above email address can be used if you are seeking assistance on preparing a compliance report.

Content of the Compliance Report

3.1 Declaration of accuracy

Under sections 490 and 491 of the EPBC Act, a person must not knowingly provide information to the department that is false or misleading. The extract below must be considered in the context of the EPBC Act as whole, including any related sections and any relevant definitions. You must seek your own legal advice regarding interpretation of the sections.

490 Providing false or misleading information in response to a condition on an approval or permit

(1) A person is guilty of an offence if:

- (a) the person is the holder of an environmental authority; and
- (b) a condition attached to the environmental authority requires the person to provide information; and
- (c) the person provides information in response (or purportedly in response) to the requirement; and
- (d) the person is reckless as to whether the information is false or misleading in a material particular.

Note: The fault element in paragraph (1)(d) can be demonstrated by proof of knowledge. See subsection 5.4(4) of the *Criminal Code*.

(2) The offence is punishable on conviction by:

- (a) imprisonment for a term not more than 2 years, a fine not more than 120 penalty units, or both, if it is proved the person knew the information was false or misleading: or
- (b) imprisonment for a term not more than 1 year, a fine not more than 60 penalty units, or both, if it is proved the person was reckless as to whether the information was false or misleading.

Note: Subsection 4B (3) of the *Crimes Act 1914* lets a court fine a body corporate up to 5 times the maximum amount the court could fine a person under this subsection.

491 Providing false or misleading information to authorised officer etc.

(1) A person is guilty of an offence if the person:

(a) provides information or a document to another person (the *recipient*); and

(b) knows the recipient is:

(i) an authorised officer; or

(ii) the Minister; or

(iii) an employee or officer in the department; or

(iv) a commissioner;

performing a duty or carrying out a function under this Act or the regulations; and

(c) knows the information or document is false or misleading in a material particular.

(2) The offence is punishable on conviction by imprisonment for a term not more than 1 year, a fine not more than 60 penalty units, or both.

Note: Subsection 4B (3) of the *Crimes Act 1914* lets a court fine a body corporate up to 5 times the maximum amount the court could fine a person under this subsection.

The declaration below must be attached to the compliance report and signed by the approval holder. **Even if the approval holder has sub-contracted the project (or part thereof), or the preparation of the compliance report, the responsibility for accuracy still lies with the approval holder.**

Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed _____

Full name (please print) _____

Position (please print) _____

Organisation (please print including ABN/ACN if applicable) _____

Date ____/____/____

3.2 Document version control

The document version control system must be a simple system for ensuring version control and documenting details of key changes to the document over time. It must identify changes and include details of timing, people responsible, and reasons for those changes.

3.3 Table of contents

The table of contents must contain:

- all section headings and page numbers
- all figures, tables, plans and maps (which must be numbered)
- all appendices (with meaningful titles, including sub-appendices if any); if appendices contain a collation of data, include a summary of the contents.

3.4 Description of activities

The description of activities section must contain a description of the approved action and details of the current activities undertaken during the period covered by the report. The compliance report must clearly identify:

- EPBC number
- project name
- approval holder and ACN or ABN
- the approved action
- location of the project
- person accepting responsibility for the report – signed declaration (see above)
- dates for the reporting period of the report
- date of preparation of the report.

3.5 Addressing all approval conditions

The compliance report must:

- demonstrate all conditions of the EPBC approval have been considered and addressed.
- List the conditions of the EPBC approval, including any variations to those conditions, noting if compliance or non-compliance with each condition has been achieved.
- If a management plan is required under an approval condition:
 - the specifics in a management plan that support an approval condition must be detailed in the compliance report; and
 - material must be provided demonstrating that the requirements of that plan have been implemented.

3.6 EPBC approval conditions and the compliance table

As part of every compliance report, a conditions compliance table in a similar format to that in Appendix A is required. The table must include:

- Condition number and reference.
- Full wording of the condition as per the EPBC approval.
- Designation regarding compliance or non-compliance.
- Summary of evidence to support the compliance designation.
- Any references to any other parts of the compliance report that may relate to that approval condition.

The report must include a clear statement that operations were, or were not, compliant with the EPBC conditions of approval, which must be supported by a summary of evidence clearly demonstrating the conclusion that compliance with the condition was (or was not) met. Supporting data such as flora and fauna surveys, photograph monitoring and groundwater monitoring data must be provided as appendices.

3.7 Designations to record findings

The following designations must be used to record findings in compliance reports:

Compliant

'Compliance' is achieved when all the requirements of a condition have been met, including the implementation of management plans or other measures required by those conditions.

Non-compliant

A designation of 'non-compliant' must be given where the requirements of a condition or elements of a condition, including the implementation of management plans and other measures, have not been met.

Not applicable

A designation of 'not applicable' must be given where the requirements of a condition or elements of a condition fall outside of the scope of the current reporting period. For example, a condition that applies to an activity that has not yet commenced.

3.8 Correcting non-compliances

Findings of non-compliance must be accompanied by a summary detailing any corrective measures taken and include:

- if the department was notified of the non-compliance and, if so, when, and how and to whom.
- The relevant condition number and reference.
- Who detected the non-compliance.
- Date when the non-compliance was detected.
- How the non-compliance was/will be corrected.
- Who (the actual person completing the correction) was/is responsible for correcting the non-compliance.
- Date when correction measures were/will be commenced and/or completed or the time frame for correction.
- What measures have been/ will be taken to avoid recurrence.

Instances of non-compliance included in previous compliance reports not fully corrected at the end of the reporting period must have a progress update in the subsequent report and an assessment of the effectiveness of the measures taken.

3.9 New environmental risks

The compliance report must discuss any new environmental risks that have become apparent during the reporting period. New environmental risks may include new pests or diseases, new information on groundwater levels, unexpected erosion etc. If new risks are identified, there must be a risk analysis and reporting. A commitment to revise the appropriate management plan (if required) must be included in the compliance report.

3.10 Other information

Any additional monitoring information or environmental research relevant to the EPBC approval and approval conditions can be included in the relevant section or appended to the compliance report. Appendices can be attached to support reporting against the EPBC approval conditions. Colour photographs and/or aerial photography can provide an excellent time record of the operation and should be included. Any additional information such as supporting documentation, consultant studies and reports must be appended.

Appendix A:

4.1 EPBC Approval Conditions Compliance Table Example

Condition Number/ reference e.g., '3(c)'	Condition Include the complete wording of the condition, and/or sub-condition that is being addressed	Is the project compliant with this condition? Compliant or Non-Compliant or Not applicable	Evidence/Comments Evidence to support claims regarding compliance or non-compliance
1	Within 10 business days of the date of commencement of the action, the person taking the action must advise the department in writing of the actual date of commencement.	Compliant	The action commenced on 15 June 2016 (see Appendix 1 – attached copy of the notification to the department) – Compliant
2	To mitigate impacts on listed migratory bird species the person taking the action must provide a 200-metre vegetation setback and boundary fencing between the golf course boundary on Lot 1 and the estuary. The setback must be in place prior to commencement of the action.	Non-compliant	The 200-metre vegetation setback and boundary fencing between the golf course boundary on Lot 1 and the estuary was not in place until after commencement of the action.
3	Prior to commencement of the action, the person taking the action must prepare and submit for the Minister's approval, a Fern Environmental Management Plan for the <i>Hypothetical Fern species</i> within the 200-metre vegetation setback required	Compliant	The action commenced on 15 June 2016. Yes, the Fern Environmental Management Plan was submitted prior to commencement of the action and approved on 30 March 2016.

	<p>under condition 2 of this approval. The approved plan must be implemented.</p> <p>The plan must include:</p> <ul style="list-style-type: none"> • A 10-year monitoring program of Fern numbers and distribution within the 200-metre vegetation setback. • A seven-year program of weed control for the setback area. • Procedures for managing impacts on ferns in the setback area if the monitoring program finds that the fern population numbers drop below 50. This includes notifying the department of this drop in population and the management actions undertaken. 		<p>The approved monitoring program requires fern population surveys to be undertaken once every two years. Two surveys have been undertaken so far (in July 2018 and July 2020) and the <i>Hypothetical Fern species</i> population continues to be stable at 73 specimens.</p> <p>Weed control activities were last undertaken in September 2020.</p> <p>Appendix 2 lists all the requirements of the Fern Environmental Management Plan and states how the requirements have been met. It includes a summary of the survey results and weed control records.</p>
4	<p>Prior to commencement of the action, the person taking the action must prepare and submit for the Minister’s approval, a Fauna Management Plan to minimise impacts on the <i>Hypothetical Potoroo species</i>. The approved plan must be implemented.</p>	Non-compliant	<p>The action commenced on 15 June 2016.</p> <p>No, the Fauna Management Plan was not submitted prior to commencement of the action.</p> <p>No, the Fauna Management Plan was not approved by the Minister.</p> <p>However, the Fauna Management Plan was prepared and has been implemented (Appendix 3 lists all the requirements of the management plan and states how the requirements have been met).</p>

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5(a)	Within 10 business days of the date of completion of construction of the clubhouse car park extension, highlighted as Car park 4 in the map at Attachment A, the approval holder must advise the department in writing that construction of the car park is complete.	Not applicable	Construction of the clubhouse car park extension has not yet commenced. We expect to commence work on it in August 2023 and complete it by March 2026.
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