Department of Transport and Main Roads: Coomera Connector Stage 1 EPBC 2020/8646 Offset Area Management Plan




earthtrade

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B	10 December 2022	Updated to incorporate TMR comments and released to TMR	David Sasse Steve Lyngcoln Alan Key	Alan Key
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G	15 February 2024	Updated to incorporate DCCEEW comments	David Sasse	Alan Key
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ACKNOWLEDGEMENTS AND DISCLAIMER

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This document has been prepared by Environmental Offset Solutions Pty Ltd t/a Earthtrade with support from Queensland Department of Transport and Main Roads (TMR).

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Declaration

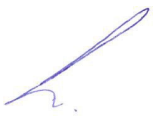
I declare that to the best of my knowledge, all the information contained in, or accompanying this document is complete, current and correct. I am duly authorised to sign this declaration on behalf of the proponent/approval holder. I am aware that:

a. *section 490 of the* Environment Protection and Biodiversity Conservation Act 1999 *(Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.*

b. *section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) where the person knows the information or document is false or misleading.*

c. *the above offences are punishable on conviction by imprisonment, a fine or both.*

Signed:



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Full name: Andrew Wheeler

Organisation: Queensland Department of Transport and Main Roads

EPBC Referral Number: EPBC 2020/8646

EPBC Offset Area Management Plan

Date: 5 / 7 /2024

Executive summary

The Coomera Connector Stage One (1) Project (the **action**) involves the construction and operation of a new 16 kilometre (**km**) high-speed arterial road between Shipper Drive, Coomera and Nerang-Broadbeach Road, Nerang, in the northern Gold Coast region in Queensland. The proponent for the action is the Queensland Department of Transport and Main Roads (**TMR**).

By constructing additional crossings of the Coomera and Nerang rivers, the action will reduce pressure on the Pacific Motorway (**M1**) by providing an alternative route for the growing communities and commercial hubs of Helensvale and Coomera. The approval has been given for the ultimate 6-lane motorway; however, the action (see *Figure 1*) will initially be built to 4 lanes to meet medium-term traffic needs with upgrading when required. Key major structures will be future-proofed to 6 lanes, to help minimise future construction impacts to adjacent residents and the travelling public.

The action was assessed as being a controlled action by the Australian Government (DAWE, August 2020).[1] The action has been granted approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**). The EPBC Act approval conditions were issued by the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**) on 17 March 2023.

An Offset Strategy (**OS**) for the action was prepared by Biodiversity Assessment and Management Pty Ltd (**BAAM**) and submitted to DCCEEW in October 2022 (Appendix 15 of the Public Environment Report (**PER**)) and was deemed adequate on 1 December 2022. The PER and OS (BAAM, 2022, *Coomera Connector Stage 1 Offset Strategy - EPBC 2020/8646: Offsets for Coastal Swamp Oak TEC, Koala and Grey-headed Flying-fox*) quantified the impacts of the action to Matters of National Environmental Significance (**MNES**), identified the proposed offset sites, and also described the proposed offset outcomes and environmental gains from the proposed offsets. The OS detailed the survey methods and results for both the impact and offset areas. On that basis, the OS demonstrated that the proposed offsets will be adequate to compensate for the action's impacts on MNES and meet the requirements of the EPBC Act Environmental Offsets Policy (**EOP**). As was required by the PER Guidelines by the now DCCEEW, the precautionary principle was applied and discussed in the executive summary on page 17 and in section 13.11.1 on page 552 of the PER as approved by the Delegate. This assessment included all baseline data, impact assessment and offsets (including Offset Strategy – Appendix 15) as required by the Public Environment Report Guidelines.

The EPBC Act approval conditions require TMR to prepare an Offset Area Management Plan (**OAMP**) for the approval of the Minister. This document is the OAMP for the action that has been prepared to meet all offset obligations and for MNES proposed to be impacted by the action. This OAMP is based on the approved Offset Strategy.

Impacts to MNES requiring offsets include one threatened ecological community (**TEC**), being the endangered Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community (**Coastal Swamp Oak TEC**), and to habitat for both Koala (*Phascolarctos cinereus*) and Grey-headed Flying-fox (*Pteropus poliocephalus* **- GHFF**). The GHFF is listed as vulnerable under the EPBC Act. The Koala's EPBC Act listing was upgraded to endangered in February 2022 (Koala was listed as vulnerable at the time of the controlled action

[1] EPBC Approvals register, at http://epbcnotices.environment.gov.au/_entity/annotation/965239af-e553-ec11-80d2-00505684c563/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1662596424011

decision; however both the PER and OS assessed the species as being endangered). An overview of the impacts to each MNES and the resultant offset requirements are summarised in *Table 1*.

The offsets will be located on two properties that are owned by TMR, known as 'Tabooba' which is located approximately 16 km south of Beaudesert in the Scenic Rim Regional Council local government area (**LGA**), and 'Greenridge' which is located in Pimpama, 3.5 km north-east of the northern extent of the action, within the Gold Coast City Council LGA. The offsets for the Coastal Swamp Oak TEC will be located at Greenridge, and offsets for Koala and GHFF will be located at both properties.

This OAMP demonstrates that the offset areas are suitable to meet all the EOP requirements and approval conditions. This OAMP has been prepared to meet all offset obligations as detailed in the OS. TMR commits to the implementation of this OAMP.

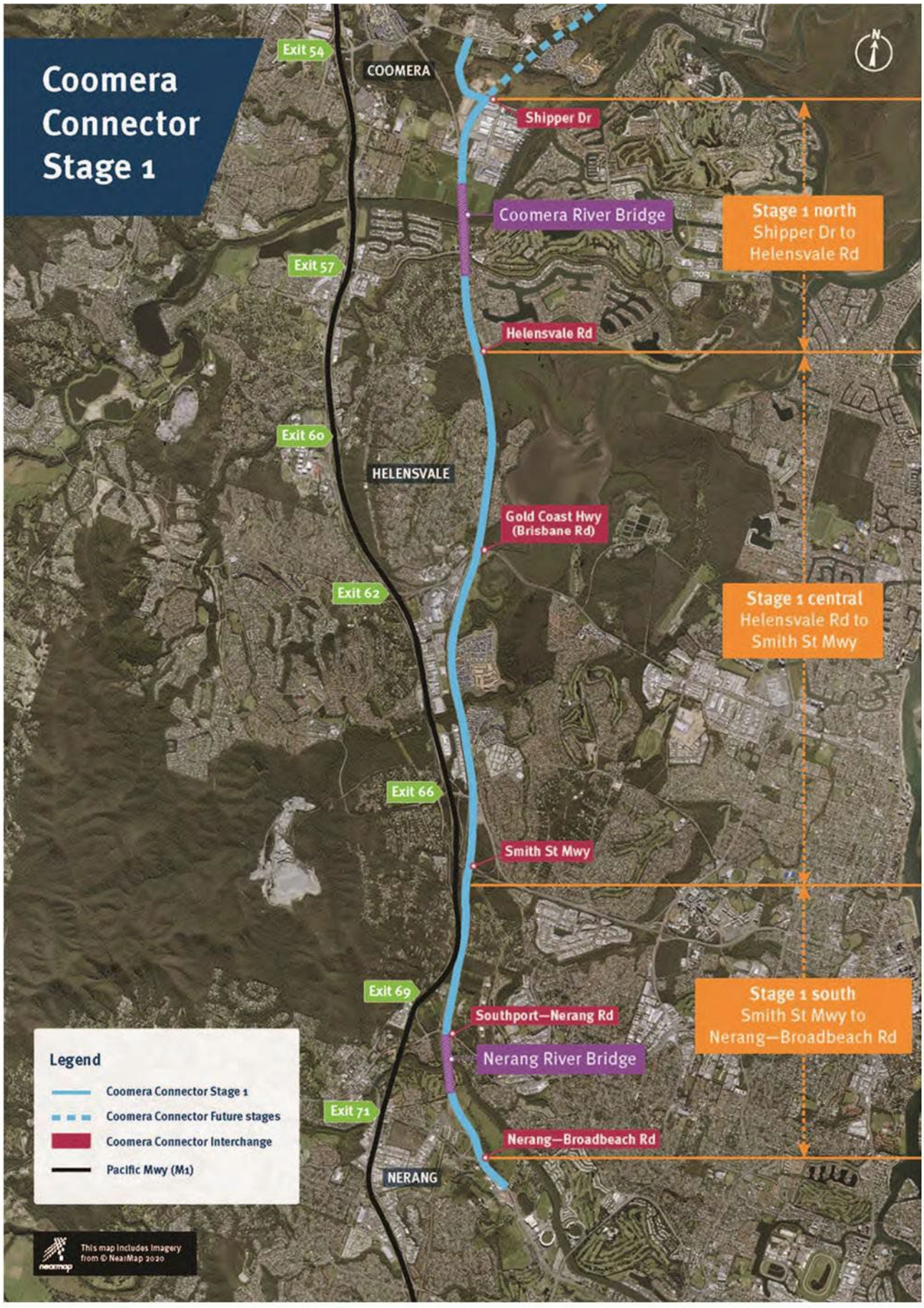
Table 1: Summarised action impacts versus proposed offset area values

MNES	EPBC status	Impact area (ha)	Impact site quality (- /10)	Impact quantum	Offset property	Offset Area	Offset start quality (- /10)	Quality without offset (- /10)	Quality with offset (- /10)	Offset quantum and % of liability provided
Coastal swamp oak TEC	END	15.9*	8	12.72	Greenridge	Remnant RE 12.1.1 AU1: 14.2 ha	8	7	9	17.47%
					Greenridge	Regrowth RE 12.1.1 AU2: 5.16 ha	7	7	9	5.67%
					Greenridge	Non-remnant (cleared) RE 12.1.1 AU3: 22.03 ha	3	3	6	34.98%
					Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	8	7	9	34.71%
					Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	7	7	9	5.23%
					Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	2	2	9	41.96%
Total area of coastal swamp oak TEC offset at Greenridge					**86.83 ha**					**143.91%**
Phascolarctos cinereus koala	VUL[#]	73.81	7	51.67	Tabooba	Remnant RE 12.8.16 AU1: 49.84 ha	8	8	9	8.78%
					Tabooba	Advanced regrowth RE 12.8.16 AU2: 145.02 ha	6	6	8	48.46%
					Tabooba	Young regrowth RE 12.8.16 AU3: 48.1 ha	4	3	7	30.73%
					Tabooba	Remnant RE 12.8.14 AU4: 50.62 ha	8	8	8	0.75%
					Tabooba	Advanced regrowth AU5: 19.8 ha	7	6	8	6.62%
					Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	8	8	8	0.42%
					Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	7	7	9	1.56%
					Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	4	4	7	5.91%
Total area of koala offset at Tabooba and Greenridge					**358.82 ha**					**103.23%**
Pteropus poliocephalus grey-headed flying-fox	VUL	68.76	7	48.13	Tabooba	Remnant RE 12.8.16 AU1: 49.84 ha	6	6	6	0.60%
					Tabooba	Advanced regrowth 12.8.16 AU2: 145.02 ha	5	5	7	76.58%
					Tabooba	Young regrowth RE 12.8.16 AU3: 48.1 ha	5	1	6	40.98%
					Tabooba	Remnant RE 12.8.14 AU4: 50.62 ha	6	6	7	9.38%
					Tabooba	Advanced regrowth RE 12.8.14 AU5: 19.8 ha	5	5	6	3.63%
					Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	6	6	7	5.23%
					Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	6	6	6	0.06%
					Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	2	2	7	10.59%
Total area of grey-headed flying-fox offset at Tabooba and Greenridge					**358.82 ha**					**147.05%**

**Includes functional loss of 0.928 ha*

[#]The EPBC conservation status of the Koala was upgraded to endangered in February 2022; however, at the time of the controlled action decision for the action, the Koala was listed as vulnerable.

Figure 1: Action location and route



1 Introduction

1.1 Action description

The Coomera Connector Stage 1 (**the action** - see *Figure 1*) involves the construction and operation of a new 16 km high-speed arterial road between Shipper Drive, Coomera and Nerang-Broadbeach Road, Nerang, in the northern Gold Coast region in Queensland. The proponent for the action is the Queensland Department of Transport and Main Roads (**TMR**).

By constructing additional crossings of the Coomera and Nerang rivers, the action will reduce pressure on the Pacific Motorway (**M1**) by providing an alternative route for the growing communities and commercial hubs of Helensvale and Coomera. The corridor is wide enough for an ultimate 6-lane motorway. The 16 km Stage 1 route will be built to 4 lanes to meet medium-term traffic needs. Key major structures will be future-proofed to 6 lanes, to help minimise future construction impacts to adjacent residents and the travelling public.

As the action is the construction and operation of a permanent road corridor, it requires the permanent removal of habitat within the action corridor (impact area).

1.2 Purpose and objectives of this management plan

The purpose of this OAMP is to address the requirements of EPBC 2020/8646 approval conditions dated 17 March 2023 relating to MNES offset requirements and offset delivery.

1.2.1 Significant residual impacts to protected matters

The EPBC approval provides for the clearing of 15.928 ha of coastal swamp oak TEC, 73.8 ha of koala habitat (consisting of 68.756 ha of koala habitat, plus an additional 5.044 ha although the habitat will not be cleared), and 68.756 ha of grey-headed flying-fox (**GHFF**) habitat from the action corridor. This OAMP details the offsets that will be provided for these significant residual impacts.

Coastal swamp oak TEC

The coastal swamp oak TEC was recorded at Helensvale (Helensvale Road, adjacent to Coombabah Wetlands; and Careel Reserve) and Coomera (at Oaky Creek). The coastal swamp oak TEC was represented by primarily by RE 12.1.1 and very small areas of RE 12.3.20 where *Casuarina glauca* was dominant. Approximately 15.93 ha of the TEC has been recorded within the proposed action corridor, of which 15.928 ha is considered to be critical habitat for the survival of this TEC.[2]

PlanIt Consulting prepared an assessment in 2022 of the extent and quality of this TEC at the impact site. Their report formed Appendix 11 of the approved PER. The vegetation was assessed in accordance with the *Queensland Guide to Determining Terrestrial Habitat Quality (version 1.3)* and *BioCondition Assessment Framework for Terrestrial Biodiversity in Queensland Assessment Manual (version 2.2)*, and the quality assessment across all assessment sites resulted in an average score of 8/10 including the areas of physical loss (15.01 ha) and the areas of functional loss (0.918 ha). A full set of scoresheets for individual assessment sites is available provided in Attachment 1 of the PlanIt report, which is provided at *Appendix E*.[3]

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[2] Department of Transport and Main Roads (2022). *Coomera Connector Stage 1 Public Environment Report*, p.257. Available at https://coomeraconnectorreport.tmr.qld.gov.au/Coomera+Connector+Stage+1+Public+Environment+Report+(EPBC+2020-8646).pdf

[3] ibid, see Appendix 11.

Koala habitat

Field surveys were undertaken to ground-truth the desktop data for koalas. The on-ground surveys were conducted in accordance with the *Koala Referral Guidelines*, incorporating numerous direct and indirect detection methods (e.g., line transects, nocturnal spotlighting, call playback, sensor activated cameras and Spot Assessment Technique (**SAT**) surveys). An intensive surveying period of 12 months was conducted from July 2018 to July 2019, encompassing all seasons, weather and climate events. Additional surveys were undertaken to develop a significant baseline. On-ground surveys for koalas were undertaken during peak (August to January) and off-peak (February to July) periods.

PlanIt Consulting prepared an assessment in 2022 of the extent and quality of koala habitat at the impact site, in accordance with the guidelines stated in the approved PER. Their report formed Appendix 12 of the approved PER. The vegetation was assessed in accordance with the *Queensland Guide to Determining Terrestrial Habitat Quality (version 1.3)* and *BioCondition Assessment Framework for Terrestrial Biodiversity in Queensland Assessment Manual (version 2.2)*. The results have been applied in accordance with *How to use the offsets assessment guide* (DSEWPaC, 2012), taking into account site condition, site context and species stocking rate to contribute to the calculation of habitat quality using the EPBC Act Offsets assessment guide.

The quality assessment resulted in an average score across all assessment sites of 7/10. The removal of 73.81 ha of habitat (which includes 5.0 ha of functional loss) results in an adjusted residual impact of 51.67 ha. A full set of scoresheets for individual assessment sites is available provided in Attachment 1 of the PlanIt report, which is provided at *Appendix F*.[4]

Grey-headed flying fox habitat

Three main survey efforts were carried out to identify the grey-headed flying-fox, which included daytime field surveys for camps, surveys of vegetation communities and food plants, and night-time surveys which included walking transects (100 metres apart) looking for feeding and flying bats.

PlanIt Consulting prepared an assessment in 2022 of the extent and quality of GHFF habitat at the impact site, in accordance with the guidelines stated in the approved PER. Their report formed Appendix 13 of the approved PER. The vegetation was assessed in accordance with the *Queensland Guide to Determining Terrestrial Habitat Quality (version 1.3)* and *BioCondition Assessment Framework for Terrestrial Biodiversity in Queensland Assessment Manual (version 2.2)*. The results have been applied in accordance with *How to use the offsets assessment guide* (DSEWPaC, 2012), taking into account site condition, site context and species stocking rate to contribute to the calculation of habitat quality using the EPBC Act Offsets assessment guide.

The quality assessment resulted in an average score across all assessment sites of 7/10. The removal of 68.76 ha of habitat results in an adjusted residual impact of 48.132 ha. A full set of scoresheets for individual assessment sites is available provided in Attachment 1 of the PlanIt report, which is provided at *Appendix G*.[5]

1.2.2 Approval conditions related to offset requirements and delivery

The requirements of each of the approval conditions relating to the offset requirements and delivery are summarised in

[4] ibid, see Appendix 12.
[5] ibid, see Appendix 13.

Table 2, and references the OAMP section that addresses each requirement.

The environmental outcomes of this OAMP are specific improvements in ecological values in habitat for each of the matters impacted by the action. These improvements are defined in detail in *Section 6* of this OAMP (Offset completion criteria and performance targets).

Table 2: EPBC approval conditions related to offsets addressed in this document

Condition	OAMP section or comment	Brief information about how the condition is addressed
Compensatory measures		
9) To compensate for the loss of up to 73.8 ha of Koala habitat, up to 15.928 ha of Coastal Swamp Oak TEC and up to 68.756 ha of Grey-headed Flying-fox habitat, the approval holder must:		
a) Legally secure a minimum of 313.38 ha of land within the Tabooba offset area and 85.82 ha of Coastal Swamp Oak TEC, 45.35 ha of Koala and Grey-headed Flying-fox offsets within the Greenridge offset area within 12 months of this approval decision.	*See Section 9*	The offset will be legally secured to the titles of the properties through the use of a declared area under the *Vegetation Management Act 1999* (Qld).
b) Within 20 business days of legally securing the areas within the Tabooba offset area and Greenridge offset area specified in condition 9(a), provide the department with:	*See Section 9*	The proponent will provide written evidence of the offsets being legally secured within 20 days of the declared areas being registered on the titles of the properties.
i) Written evidence demonstrating that the areas within the Tabooba offset area and Greenridge offset area specified in condition 9(a), have been legally secured	*See Section 9*	
ii) Shapefiles and offset attributes of the areas within the Tabooba offset area and Greenridge offset area specified in condition 9(a).	*See Section 9*	Shapefiles will be provided within 20 days of the declared areas being registered.
c) Achieve all the habitat quality uplift outcomes within the timeframes specified.	*See Section 6*	Management actions have been developed to ensure that the vegetation communities are restored to benchmark condition.
10) Within 6 months of this approval decision, the approval holder must submit an Offset Area Management Plan for the Tabooba offset area and Greenridge Offset area (OAMP-TOA&GOA) to the department for the Minister's approval. The OAMP-TOA&GOA must meet the requirements of the Environmental Offsets Policy, the Environmental Management Plan Guidelines and meet the requirements specified in Attachment F to the satisfaction of the Minister.	*This document*	
11) If the Minister writes to the approval holder stating that he/she considers that the OAMP-TOA&GOA, required under condition 10 is not likely to achieve the outcomes required under condition 9(c), the approval holder must cease all clearing and/or construction at the development area within 2 months of receiving such a notice, or as otherwise directed by the Minister. Clearing and/or construction may only restart after the Minister	*See Section 10*	Noted.

Condition	OAMP section or comment	Brief information about how the condition is addressed
notifies the approval holder that the Minister has approved the revised OAMP-TOA&GOA, or otherwise with the Minister's written direction.		
12) The approval holder must implement the OAMP-TOA&GOA as approved by the Minister until the expiry of this approval.	*See Section 11*	The proponent commits to implementing this OAMP. *Table 3* lists all commitments made as part of this management plan.
Submission and publication of plans		
32) The approval holder must submit all plans required by these conditions electronically to the department.	*See Section 10*	The approval holder will submit this plan electronically.
33) Unless otherwise agreed to in writing by the Minister, the approval holder must publish each plan on the website within 15 business days of the date:	*See Section 10*	Once approved by the Minister, the approval holder will publish this plan on the website and keep it published on the website until the approval expiry date.
b) the plan is approved by the Minister in writing, if the plan requires the approval of the Minister; or		
34) The approval holder must keep all published plans required by these conditions on the website until the expiry date of this approval.	*See Section 10*	
General		
39) The approval holder must maintain accurate and complete compliance records.	*See Section 8*	The approval holder will maintain accurate and complete compliance records.
40) If the department makes a request in writing, the approval holder must provide electronic copies of compliance records to the department within the timeframe specified in the request.	*See Section 8*	The approval holder will provide electronic copies of compliance records to the department within the timeframe specified in the request.
43) The approval holder must submit all monitoring data (including sensitive ecological data), surveys, maps, other spatial and metadata and all species occurrence record data (sightings and evidence of presence) electronically to the department within 12 months of the approval or in accordance with the requirements of the OAMP-TOA&GOA.	*See Section 8*	The approval holder will submit all monitoring data electronically to the department within 12 months of the approval or in accordance with the requirements of the OAMP.
48) The approval holder must notify the department electronically, within 2 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance with the conditions or commitments made in a plan.	*See Section 10*	The approval holder will notify the department electronically, within 2 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance with the conditions or commitments made in this OAMP; specifying which condition or commitment has been breached, a short description of the incident and its location.
49) The approval holder must specify in the notification: a) Any condition or commitment made in a plan which has been or may have been breached. b) A short description of the incident and/or potential non-compliance and/or actual non-compliance.	*See Section 10*	

Condition	OAMP section or comment	Brief information about how the condition is addressed
c) The location (including co-ordinates), date, and time of the incident and/or potential non-compliance and/or actual non-compliance.		
50) The approval holder must provide to the department in writing, within 12 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance, the details of that incident and/or potential non-compliance and/or actual non-compliance with the conditions or commitments made in a plan. The approval holder must specify: a) Any corrective action or investigation which the approval holder has already taken b) The potential impacts of the incident and/or non-compliance and/or non-compliance c) The method and timing of any corrective action that will be undertaken by the approval holder.	*See Section 5.2* *See Section 10*	The approval holder will provide to the department in writing, within 12 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance, the details of that incident and/or potential non-compliance and/or actual non-compliance with the conditions or commitments made in this OAMP; specifying any corrective action or investigation which the approval holder has already taken; the potential impacts of the incident and/or non-compliance; and the method and timing of any corrective action that will be undertaken by the approval holder.
Offset Management Plan Requirements (Attachment F of approval)		
a. Include a reference to the EPBC Act approval conditions (and state or local government approval conditions) to which the Offset Management Plan refers	*This table*	
b. Specify referenced plans, including revegetation and rehabilitation plans, and how these can be accessed.	*Provided at Appendix B and Appendix C*	
c. Include detailed information on the residual impacts to protected matters that will be offset. This must include the area(s) of habitat for protected matters and its condition and quality at all impact sites which the offset is to address	*See Section 1.2.1*	Coastal swamp oak TEC impact habitat quality score (**HQS**) = 8/10; koala habitat impact HQS = 7/10, grey headed flying-fox impact HQS = 7/10. Detailed data provided at *Appendix E*, *Appendix F* and *Appendix G*.
d. Identify a suitable environmental offset(s) for the impacts on protected matters, and provide detailed baseline information on the proposed offset(s) and commit to achievable and measurable ecological benefits, and timeframes for their achievement, for the proposed offset(s)	*See Section 3.* *See Section 1.3* *See Section 6*	BioCondition data for the 2 offset properties is provided at *Appendix H* and *Appendix I*. HQS tables for offsets for each matter are provided at *Appendix J*, *Appendix K* and *Appendix L*.
e. Detail how the offset(s) will be protected, and ecological benefits maintained, in perpetuity	*See Section 5* *See Section 9*	TMR will legally secure the offset areas in perpetuity through the use of a declared area. Thus, the ecological benefits to the species from the implementation of this OAMP will result in a permanent change to the legal status of the vegetation/habitat which will be protected under the EPBC Act as MNES

Condition	OAMP section or comment	Brief information about how the condition is addressed
		habitat, *Vegetation Management Act 1999* (Qld) as remnant vegetation and essential habitat and the *Nature Conservation Act 1992* (Qld) as habitat for a protected species. With respect to the property Tabooba, TMR may enter into an agreement with the Queensland Department of Environment and Science (**DES**) and/or Scenic Rim Regional Council (**SRRC**) to have the property established as a nature conservation area and/or be maintained under the Land for Wildlife program respectively. Brief informal discussions have already been had with SRRC's Land for Wildlife Program as to TMR and Council maintaining the property post approval. Decisions on the maintenance of the property would be made closer to the lapsing of the approval. With respect to the property Greenridge, DES and Gold Coast City Council (**GCCC**) have previously expressed interest in acquiring Greenridge. Given the interest by both DES and GCCC, TMR may enter into an agreement with either or both DES and GCCC to maintain the property particularly given its proximity to the Pimpama River Conservation Area. Decisions on the maintenance of the property would be made closer to the lapsing of the approval.
f. Include a table of commitments to achieve the ecological benefits for relevant protected matters, and a reference to where the commitments are detailed in the Offset Area Management Plan	*See Table 3*	
g. Include timebound management actions that will be implemented to achieve the measurable ecological benefits for relevant protected matters	*See Section 5*	Management actions, triggers and corrective actions are detailed in *Table 12* through *Table 15*.
h. Include an assessment of risks to achieving the ecological benefit(s) and what risk management strategies will be applied to address these	*See Section 4*	Each risk identified in the respective conservation advice, listing advice and recovery plans has been assessed and is detailed in *Table 10* and *Table 11*.
i. Include reporting and review mechanisms, and documentation standards to inform others annually regarding compliance with management and	*See Section 8*	Annual reporting is detailed in *Table 189*.

Condition	OAMP section or comment	Brief information about how the condition is addressed
environmental commitments, and attainment and maintenance of ecological benefits, as specified in the Offset Area Management Plan.		The methodology for reporting compliance and attainment of ecological benefits is detailed in *Table 19.*
j. Propose corrective actions to ensure ecological benefits for the protected matters are attained or maintained, if trigger values are reached or performance indicators not attained	*See Section 5*	Corrective actions and the triggers for these corrective actions are detailed in *Table 12* through *Table 15*.
k. Include a monitoring program for the full duration of the proposed offset management period, which must include: i. measurable performance indicators to monitor progress towards attainment of the ecological benefits for the protected matters ii. a randomisation of monitoring within the offset area to ensure ecological benefits reflect the whole offset site(s) iii. trigger values and timing of corrective actions iv. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators.	*See Section 8*	The methodology for reporting compliance and attainment of ecological benefits is detailed in *Table 19.* While undertaking monitoring activities, the responsible person will move between the permanent survey points in a random manner noting any substantial variation in the condition of the offset area between the permanent monitoring points. Any substantial variation is to be noted in the subsequent report. Corrective actions and the triggers for these corrective actions are detailed in *Table 12* through *Table 15*

1.3 Commitments made in the OAMP

This section summarises the commitments made throughout this OAMP to achieve ecological benefit(s) for the relevant MNES. These ecological benefits will be achieved through the integrated implementation of many elements of this OAMP. Additional commitments are also made in alignment with the general conditions of the approval. *Table 3* below lists each of these commitments and provides references to the sections in this OAMP where these commitments are detailed.

Table 3: Commitments made in this OAMP

Commitment	OAMP section or comment
The approval holder commits to the implementation of this OAMP.	*See Executive summary and Section 11*
The approval holder commits to achieve the ecological benefits for each protected matter.	*See Section 3.3.4, Section 3.4.4 and Section 3.5.4*
The approval holder commits to undertaking the management actions as described in *Table 12 and Table 13*.	*See Section 5.1*
The approval holder will engage suitably qualified persons to undertake the BioCondition assessments, ecological studies and surveys, prepare reports and undertake inspections, as required.	*See Section 5 and Section 8*
The approval holder will notify the Department (within the timeframe stipulated by the approval conditions) of any incident, non-compliance with conditions, or non-compliance with any of the commitments made in this OAMP	*See Section 5.2 and Section 10*
The approval holder will provide an annual compliance report to the Department describing the progress of the offset area over the relevant 12-month period.	*See Section 8*
The approval holder commits to registering a legally binding conservation mechanism to provide long-term protection to the offset area within 12 months of the date of the approval conditions (i.e 17 March 2024).	*See Section 9 and Section 11*
The approval holder will provide written evidence to the Department within 20 business days of the mechanisms to legally secure the offsets having been registered.	*Section 9*
The approval holder will notify the Department of any incident or potential or actual non-compliance with the conditions or commitments made in this OAMP as soon as practical and no later than 2 business days after becoming aware of the incident or non-compliance.	*Section 10*
The approval holder will provide to the Department in writing, within 12 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance, the details of that incident and/or potential non-compliance and/or actual non-compliance with the conditions or commitments made in this OAMP. The notification will specify any corrective action or investigation which the approval holder has already taken; the potential impacts of the incident and/or non-compliance and/or non-compliance; and the method and timing of any corrective action that will be undertaken by the approval holder.	*Section 10*
If the approval holder wishes to carry out any activity otherwise than in accordance with this OAMP, the approval holder will submit to the Department for the Minister's written approval a revised version of the OAMP. The varied activity will not commence until the Minister has approved the varied OAMP in writing. If the	*Section 10*

Commitment	OAMP section or comment
Minister approves the revised OAMP, that OAMP will be implemented in place of the OAMP originally approved.	
This OAMP will be published on TMR's website within 15 business days of the OAMP being approved by the Minister. The OAMP will remain on the website and accessible to the public for the duration of the EPBC Act approval.	*Section 11*

1.4 OAMP structure

The OAMP is divided into 7 sections that provide the following:

- Offset property and offset area descriptions
- Risk analysis
- Offset management measures
- Completion criteria and performance targets
- Monitoring and reporting
- Legally binding mechanism
- Adaptive management and plan review.

2 EPBC Act Environmental Offsets Policy and framework

This section describes how the proposed offset meets the relevant requirements of the EPBC Act *Environmental Offsets Policy* (October 2012) (**EOP**), plans and guidelines.

2.1 Policy principles

The EPBC Act EOP sets out eight key overarching principles to determine the suitability of offsets. *Table 4* outlines each of the policy principles and how it has been considered in the OAMP, with a reference to the relevant OAMP section.

Table 4: EPBC Act Environmental Offset Policy principles

Policy principle	Action offsets
Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matters.	The offset will deliver a conservation outcome by providing habitat for Coastal Swamp Oak TEC, koala and GHFF. The habitat will be managed to improve the habitat values for those species, and the offset area will be secured as a declared area under the *Vegetation Management Act 1999* (Qld) (**VM Act**) to ensure legal protection of the offset area. TMR will legally secure the offset areas in perpetuity through the use of a declared area. Thus, the ecological benefits to the species from the implementation of this OAMP will result in a permanent change to the legal status of the vegetation/habitat which will be protected under the EPBC Act as MNES habitat, *Vegetation Management Act 1999* (Qld) as remnant vegetation and essential habitat and the N*ature Conservation Act 1992 (Qld)* as habitat for a protected species. Additionally, the completion criteria and the 'with offset' non-native species attribute (provided in *Appendix J*, *Appendix K* and *Appendix L*) establishes the acceptable limits to non-native species in the offset area. These will be achieved as a requirement of this OAMP. With respect to the property Tabooba, TMR may enter into an agreement with DES and/or SRRC to have the property established as a nature conservation area and/or be maintained under the Land for Wildlife program respectively. Brief informal discussions have already been had with SRRC's Land for Wildlife Program as to TMR and Council maintaining the property post approval. Decisions on the maintenance of the property would be made closer to the lapsing of the approval. With respect to the property Greenridge, DES and GCCC have previously expressed interest in acquiring Greenridge. Given the interest by both DES and GCCC, TMR may enter into an agreement with either or both DES and GCCC to maintain the property particularly given its proximity to the Pimpama River Conservation Area. Decisions on the maintenance of the property would be made closer to the lapsing of the approval.
Suitable offsets must be built around direct offsets but may include other compensatory measures.	100% of the action's MNES offset obligations for Coastal Swamp Oak TEC, koala and GHFF will be acquitted by the proposed direct land-based offsets.

Policy principle	Action offsets
Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter.	The status of the impacted threatened species has been taken into account by the offset assessment guide that has been used to calculate the offset area requirements. The koala was listed as 'vulnerable' under the EPBC Act at the time of the controlled action decision but assessed as 'endangered' in the PER. Coastal Swamp Oak TEC is listed as 'endangered' under the EPBC Act, and the GHFF is listed as 'vulnerable'.
Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter.	The extent of the offset has been calculated using ecological reports that include both flora and fauna surveys, for both the impact and offset sites to inform inputs into the offset assessment guide (**OAG**). The inputs to the OAGs for each of the protected matters impacted are detailed in *Section 3.3* to *Section 3.5.*
Suitable offsets must effectively account for and manage the risks of the offset not succeeding.	As was required by the Public Environment Report Guidelines by the now DCCEEW, the Precautionary Principle was applied and discussed in the executive summary on page 17 and in section 13.11.1 on page 552 of the Public Environment Report as approved by the Delegate. This assessment included all baseline data, impact assessment and offsets (including Offset Strategy – Appendix 15) as required by the Public Environment Report Guidelines. This OAMP is based on the approved Offset Strategy, and the risks associated with the offsets have been assessed (*Table 10* and *Table 11*) and mitigation and appropriate management actions proposed in the offset area management measures shown in *Table 12* and *Table 13*. In addition, uncertainty, and therefore risk, associated with averted loss and net gain in habitat quality were addressed by applying the offset assessment guide.
Suitable offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs.	Vegetation clearing as a native forest practice, or a forest practice; the use of fire to manage regrowth and grazing on the offset site; is not currently prohibited by legal mechanisms at either the local, state or Australian government legislative level. See *Section 5* and *Section 7*. The offset areas are zoned rural and have previously been used for timber harvesting and cattle grazing. Areas of the offset properties have been subject to vegetation clearing[6] under the land management practices of previous owners over the last 3 decades. The current regulated vegetation will be secured via a declared area that has its head of power under the VM Act. This threat will be removed from the offset sites. See *Section 9* for further detail. The offset area is not subject to other schemes or programs. The offset areas are being rehabilitated from intensive grazing. The *Biosecurity Act* has a baseline duty of care for weed and pest animal control as detailed in *Table 17*. All of the management actions detailed in *Table 12* to *Table 15* inclusive are above and beyond the requirements of the Biosecurity Act.
Suitable offsets must be efficient, timely, transparent, scientifically robust and reasonable	The proposed offsets will be efficient and timely as the offset will be established and implementation commenced within 6 months of the Minister approving this OAMP. The offsets' scale and suitability are transparent, and the offsets are based on the terrestrial ecology reports prepared by suitably qualified ecologists for the impact and offset sites (Planit 2021a, 2021b; 2022, BAAM, 2022); They have been prepared using the EPBC Act OAG inputs and calculators. Refer to *Section 3* for further detailed application of the OAG. Implementation of the OAMP has begun, with fire management lines installed and security to mitigate illegal access installed. The

[6] *Vegetation Management Act 1999*, Schedule dictionary

Policy principle	Action offsets
	management actions within this OAMP will be implemented on approval of the OAMP
Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.	The offset sites were surveyed in May 2022 (Tabooba) and June-August 2022 (Greenridge), providing the baseline habitat quality assessment and these scores were compared against the relevant BioCondition benchmarks[7] for each regional ecosystem (**RE**). Habitat quality assessments were conducted in accordance with the *Guide to Determining Terrestrial Habitat Quality Version 1.3, 2020* (Queensland Department of Environment and Science (**DES**)) which involved collecting spatial data; and conducting in situ vegetation surveys, assessing site condition, spatial context as well as targeted species habitat criteria (refer to BAAM 2022, and *Appendix A* of this OAMP). Future habitat assessment measurements will be conducted in accordance with this plan during its implementation phase. Monitoring and reporting are detailed in the Offset Area Management Measures outlined in *Table 12* and *Table 13*, and the monitoring schedule and reporting schedule are shown in *Table 18* and *Table 19*. The offset will be protected from clearing and secured via a Declared Area that has its head of power under the VM Act. Refer to *Section 9* for further detail.

2.2 Addressing relevant EPBC plans and advice

The EOP states that an offset should address key priority actions for the impacted MNES in any approved recovery plans, threat abatement plans, conservation advice, ecological character description or approved Commonwealth Management Plan.

Table 5 summarises how this OAMP addresses the relevant conservation advice, recovery plans and threat abatement plans, on the offset sites.

[7] Benchmarks are quantitative values derived from data collected from field-based reference sites for each site condition attribute assessed in BioCondition

Table 5: Conservation Advice and Threat Abatement Plans addressed in the OAMP

Document	Key threats	Section addressed in document
Conservation advice (incorporating listing advice) for the Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community. (2018) Department of the Environment and Energy, Canberra.	<u>Clearing and fragmentation</u> Extensive land clearing and landscape modification for agricultural and coastal development over the past 200 years has reduced the extent of the ecological community. This remains an ongoing threat as most of the remaining ecological community, as well as potential regrowth areas, occurs in close proximity to regional centres or on productive agricultural land. As Coastal Swamp Oak forest occurs as small patches in a mosaic environment, connectivity with other patches of the ecological community within the mosaic is important, as few individual patches are large enough on their own to provide sufficient species and genetic diversity to ensure their long-term survival.	For the contribution to connectivity and biodiversity corridors – Refer to *Section 3.1.1* and *Section 3.1.2*. The offset site was selected for its potential to provide a substantial increase to the TEC, connectivity and other ecological values within the surrounding area. See also the revegetation plan for the TEC at Greenridge at *Appendix C*.
	<u>Weeds</u> Invasion by non-native plant species is a major threat to this ecological community (Keith and Scott, 2005; Tozer et al., 2010). It is often a result of physical disturbance to the vegetation structure of the community; landfill associated with adjacent urban and industrial infrastructure, including sporting fields; soil disturbance; dumping of building or excavation waste, rubbish and garden refuse; encroachment of garden plants with spread assisted by birds, wind, water and altered drainage patterns; polluted runoff from urban and agricultural areas; construction of roads and other utilities; or grazing by domestic livestock or feral animals. Invasion of some weed species can also be a result of changed fire regimes (Queensland Herbarium, 2016).	Refer to *Table 12* and *Table 13* for details of invasive plant and environmental weed management to be undertaken. Results will be monitored as part of the ongoing monitoring program.
	<u>Invasive fauna</u> The ecological community, particularly its faunal elements, is subject to a range of impacts from invasive animals. These include: • Predation habitat destruction through trampling and soil disturbance, competition and disease transmission by feral pigs; • Predation and spread of invasive plant species by wild dogs, foxes, cats, and other feral species; • Grazing and trampling pressures from rabbits, goats, deer and other feral herbivores, which can leave the ecological community open to erosion and weed invasion.	See *Table 12* and *Table 13:* Feral animals – monitoring and control as detailed. Existing populations of feral and wild animals (feral cats, wild dogs and feral pigs) will be controlled within the offset areas in accordance with the *Biosecurity Act 2014* (Qld). Monthly inspections to record the presence of wallow holes, tracks and visual incidents, in the offset area will be undertaken. On being notified or becoming aware of the presence of large numbers, for example, approximately 10 feral and/or wild animals

Document	Key threats	Section addressed in document
	Feral pigs (*Sus scrofa*), are noted as a particular threat to this TEC. As opportunistic omnivores they can have direct impacts such as preying on a range of small animals, eggs, carrion and foliage, or digging up invertebrates, underground fungi, fruit, seeds, roots, tubers, bulbs. This impacts upon the ecological community by altering plant species composition and succession, nutrient and water cycles and degrading water quality.	or multiple tracks in the offset area at any one time, the Landholder is to implement feral animal control measures within one month.
	<u>Impacts resulting from agricultural activities, including grazing</u> Many of the alluvial areas along the east coast of Australia have been grazed and forested since the early to mid-19th century. The need for land for agriculture has driven both the clearing of the ecological community and draining the wetlands it is a part of. Overgrazing can degrade the ecological community through vegetation loss (grazing and trampling), soil compaction (hard hoofed stock), disturbing sediments and increasing nutrient levels	See *Table 12* and *Table 13:* Grazing management. Livestock will be excluded from the offset area.
	<u>Inappropriate fire regimes</u> Fire regimes have been changed throughout the extent of the ecological community in association with the growth of agriculture and urban development. In rural areas, fire is used to promote green pick for livestock and in urban areas, and hazard reduction management can increase fire frequency. The amount of fallen timber and other plant litter can be diminished during such burns.	See *Table 12* and *Table 13:* Fire management. Planned burns undertaken in Coastal Swamp Oak TEC will be in accordance with relevant RE fire management guidelines. See also *Table 15* for the fire management strategy to be used at Greenridge.
Conservation advice for Phascolarctos cinereus *(Koala)*. (2022) DAWE, Canberra. *National Recovery Plan for the Koala:* Phascolarctos cinereus *(combined populations of Queensland, New South Wales and the Australian Capital Territory)*. (2022) DAWE, Canberra	<u>Climate change driven processes and drivers:</u> • Loss of climatically suitable habitat Areas that are climatically suitable for koalas are contracting. Climate change predictions indicate drier, warmer conditions across the koala's range. Current and future climate change projections indicate a progressive eastward and southwards contraction in the koala's suitable climate envelope and consequent suitable habitat (Adams-Hosking et al. 2011). • Increased intensity/frequency of drought Low rainfall has been linked with physiological stress to koalas due to low moisture levels, causing negative effects on population viability (Davies et al. 2013). In the future, average winter and	For the contribution to biodiversity corridors and connectivity – Refer to *Section 3.1.1* and *Section 3.1.2*. The offset sites were selected for their potential to provide a substantial increase to the habitat, connectivity and other ecological values within the surrounding area. The areas are currently composed of degraded tracts of regulated and regrowth vegetation. Protecting eucalypt forests from native timber harvesting and clearing, and inappropriate fire will add significant value to the areas by improving the condition and connectivity of local and regional koala habitat. The prevention of harvesting of larger trees will provide more and larger shelter as the RE rehabilitates to scores closer to the benchmark.

Document	Key threats	Section addressed in document
	spring rainfall are predicted to continue to decline across the koala's range (BoM 2021). • Increased intensity/frequency of heatwaves Due to climate change, average temperatures across the koala's range will continue to increase across all seasons resulting in an increased frequency and intensity of heat stress days and heat wave episodes (BoM 2021). Heat stress threats will synergistically interact with drought, further exacerbating the impacts of reduced water availability. • Increased intensity/frequency of bushfires Australia will continue to experience a harsher fire-weather climate into the future (BoM 2019, 2021). The fire season length is increasing and the number of catastrophic fire days will increase in the future by an estimated 15-70% by 2050 (Climate Council 2019). A broad range of fire-related threats exist including high frequency fire, high severity fire, shifts in fire season, biodiversity loss, declining ecological mechanisms, shifts in biotic interactions including reproduction and fire-predator interactions, fire-drought interactions, and fire-fragmentation interactions which can be amplified by land clearing and logging (Bradshaw et al. 2018; Leavesley et al. 2020). All of these threats will have a significant impact on koala habitat and resident populations. • Declining nutritional value of foliage Physical disturbance (e.g., logging during forestry activities and/or fire) alters tree species composition and can favour tree species that do not support the koala's nutritional requirements (Au et al. 2019). Additional research is required to assess how elevated levels of CO_2 affect nitrogen and available nitrogen (which integrates the effects of tannins) (DeGabriel et al. 2009). Bushfire effects on the nutritional value of eucalypt regrowth (e.g., epicormic growth) are unknown and research has been initiated.	Additionally, the offset will assist in landscape connectivity and context by improving the existing regulated vegetation adjacent to and within the landscape corridors. Fire is not permitted in the offset area unless for fuel reduction purposes, at no less than seven-year intervals and no more than 30% of the area at any one time (as per Queensland DES RE descriptions fire management guidelines) (refer to *Table 12* and *Table 13* for related management actions and *Table 14 and Table 15* for the fire management strategies). Fuel reduction burns will be used as a last resort, and if utilised will be planned to be low intensity with no canopy scorch, with the aim to reduce fuel load in the ground cover layer. This practice aims to prevent unplanned high intensity burns that result from a build-up of fuel. Appropriate fire management will mitigate the increased risks of fires on the site. The prevention of harvesting of larger trees will provide more and larger foraging and shelter trees as the RE rehabilitates to scores closer to the benchmark.
	<u>Clearing and degradation of koala habitat</u> Human activities (e.g., deforestation and land clearance for grazing, agriculture, urbanisation, timber harvesting, mining and other activities) have resulted in habitat loss, fragmentation and degradation.	Refer to *Table 12* and *Table 13* - Forestry and native vegetation - clearing is not allowed under the management plan. No forestry or timber harvesting activities will be conducted during the period of the declaration of the offset area.

Document	Key threats	Section addressed in document
		Forestry and native timber harvesting practices in the offset areas have previously removed large trees that provide shelter and food and may also contain hollows and deadwood. It is therefore considered a potential threat to the quality of the habitat.
	Increased mortality due to vehicle strikes and dogs Vehicle related mortality occurs regularly on roads in close proximity to occupied koala habitat (Gonzalez-Astudillo 2018; Queensland Government 2021). Dog attacks are also a significant cause of death and injury especially in areas within and adjacent to peri-urban and residential areas (DPIE 2020). Koalas are unable to adapt to these threats and as human activities continue to expand into koala habitat, trauma from these threats will continue.	Refer to *Table 12* and *Table 13:* Feral animals – monitoring and control as detailed. Existing populations of feral animals (feral cats, wild dogs and feral pigs) will be controlled within the offset areas in accordance with the *Biosecurity Act 2014* (Qld). Monthly inspections to record the presence of wallow holes, tracks and visual incidents, (e.g. any injury to or predation of koalas), in the offset areas will be undertaken.
	Koala retrovirus (**KoRV**) and Chlamydia (*Chlamydia percorum*) Disease can be a major contributor to population decline and reduces population viability. Infection with the bacterium Chlamydia pecorum can cause infertility, blindness and eventually death (Polkinghorne et al. 2013). The prevalence of disease (chlamydiosis) has been found to increase following extreme stress from hot weather, drought, habitat loss and fragmentation (Lunney et al. 2012; Davies et al. 2013). The Koala Retrovirus (KoRV) is thought to be responsible for a range of conditions, including leukaemia (Tarlinton et al. 2005) and an immunodeficiency syndrome. There is some evidence that chlamydiosis may be exacerbated by KoRV (Tarlinton et al. 2005). KoRV has endogenised in koalas (Hanger 2000, Tarlinton et al. 2006) in Queensland and New South Wales (Simmons et al. 2012). That is, it has infected germ line cells (spermatozoa or oocytes) and is transmitted genetically (by inheritance) from parents to offspring. Although this is a known mechanism of transmission, other non-endogenised (exogenous) variants of KoRV may also spread from koala to koala (horizontal spread) by close contact, and from infected mothers to their joeys via the milk, in a manner similar to the way that many other retroviruses spread (Hanger 2000, Quigley et al. 2018).	Although antibiotics are used successfully to treat some cases of chlamydial disease, there is no known treatment for putative KoRV-associated disease. The establishment of the offset area which adjoins the landscape corridors, as well as buffers and increases in extent and condition of the habitat may act to reduce some of the environmental stressors that are thought to accentuate the diseases. In addition, the Coomera Connector Koala Conservation Strategy defines the management actions that aim to reduce the impact of chlamydial disease in the koala population in the vicinity of the proposed action, as a component of the other compensatory measures proposed - an outcome delivered as part of the Koala Tagging and Monitoring Programs. These management actions include treatment of chlamydiosis-affected koalas and support of koala chlamydial and KoRV vaccine research
National Recovery Plan for the Grey-headed Flying-fox	Loss and degradation of foraging and roosting habitat	Improving the quality of the vegetation will enhance foraging and roosting habitat for the grey-headed flying-fox. Both of the offset

Document	Key threats	Section addressed in document
'Pteropus poliocephalus', (2021) DAWE, Canberra.	Human activities (e.g., deforestation and land clearance for grazing, agriculture, urbanisation, and timber harvesting and other activities) have resulted in habitat loss, fragmentation and degradation.	sites and surrounding landscape are dominated by vegetation species that are important habitat such as *Eucalyptus tereticornis* and *E. crebra*. The prevention of harvesting of larger trees will provide more and larger foraging and shelter trees as the regional ecosystem rehabilitates to scores closer to the benchmark. Habitats of Tabooba are within the typical foraging distance of the 6 known GHFF camps that are located within a 20 km radius of the boundary of the property. At Greenridge, the dominant canopy species within the REs present indicates REs 12.3.5, 12.3.20 and 12.11.23 have high value for GHFF, attributed to the dominance of winter-flowering canopy species. During a Koala survey of Greenridge conducted by ddwfauna for Titanium Enterprises Pty Ltd in 2006, GHFF were reported to be widespread throughout vegetated areas and were observed feeding on *E. tereticornis* and *Melaleuca quinquenervia.* See *Section 5, Table 12* and *Table 13,* and *Appendix C.*
	<u>Conflict with people</u> Conflict with people, including disturbance in camps and mortality from actions to manage commercial fruit crops, is considered to be a moderate threat, but is increasing in urban areas. Most conflict occurs in heavily urbanised environments where domestic gardens can provide an increased density and diversity of food trees. Negative perceptions of GHFF can lead to conflict, impacting the population directly through harassment, deliberate destruction and attempts at dispersal or indirectly by inhibiting community support for conservation initiatives. People living near flying-fox camps can find them annoying and unpleasant. Flying-fox camps are often noisy during the day and just before dawn when individuals return from foraging, and can generate a strong smell caused by the dense concentration of animals. People in close proximity can also be concerned about mess from faecal droppings and the potential for transmission of diseases from flying-foxes to people (Eby 1995, Tidemann 1999, Smith 2002).	Access limitations to the offset sites will reduce the likelihood of human disturbance to the species and its foraging and roosting habitat. Public access to the offset area is prohibited. Access is restricted to those authorised persons required to undertake actions described in this management plan, including the landholder, and approval holder staff and their contractors and assigns. The offset area is not to be utilised for any purpose including recreational activities, or any other activities that deter from achieving the outcomes of this plan. See *Section 5, Table 12* and *Table 13.*

Document	Key threats	Section addressed in document
	<u>Entanglement in barbed wire fencing</u> Flying-foxes can become entangled in barbed wire, usually on the top strand. Actions under the recovery plan include promoting methods of fencing to avoid entanglement.	Use of plain top wire on fencing instead of barbed wire will reduce the likelihood of entanglement. See *Section 5, Table 12* and *Table 13.*
	<u>Climate change driven processes</u> The impact of climate change on grey-headed flying-foxes is unknown but increasing temperatures, storms, bushfires and floods and drought conditions are likely to degrade foraging and roosting habitat, influence the frequency of foraging in commercial orchards, cause heat stress and increase heat related mortality.	The connecting of the protected areas around the offset sites will increase the ability of the habitat to withstand periods of drought and increased heat waves. The prevention of harvesting of larger trees will provide more and larger shelter as the regional ecosystem rehabilitates to scores closer to the benchmark. Additionally, the offset will assist in landscape connectivity and context by improving the existing regulated vegetation adjacent to and within the landscape corridors that link to the offset properties.
Threat Abatement Plan for predation, habitat degradation, competition and disease transmission by feral pigs (2005) Department of Environment and Heritage, Canberra	Predation by feral pigs	Refer to *Table 12* and *Table 13*, and to *Section 5* for a detailed description of the feral pest animal strategy that will be employed. Major damage to the environment/habitat occurs when large numbers of animals congregate in the area. Feral animals will be monitored and controlled as described in *Table 12* and *Table 13.*
Threat Abatement Plan for predation by the European red fox (2008) Department of the Environment, Water, Heritage and the Arts, Canberra.	Predation by foxes	The plan will minimise the presence of feral animals and control of existing populations of feral animals (wild dogs and feral pigs) within the offset areas in accordance with the *Biosecurity Act 2014* (Qld).

3 Offset properties

3.1 Overview of the offset properties

3.1.1 Tabooba

Tabooba is located at 226 Farringdon Road, Tabooba, approximately 16 km south of the town of Beaudesert in the Scenic Rim Regional Council LGA (see *Figure 2*) and 37 km south-west of the southern extent of the action. Tabooba covers 390.25 ha in total and is comprised of four lots:

- Lot 3 on RP32561 (152.61 ha)
- Lot 174 on W311810 (64.75 ha)
- Lot 296 on W312231 (44.08 ha)
- Lot 85 on W311299 (129.54 ha).

Tabooba is located on the western and southern slopes of the Jinbroken Range which separates the Albert and Logan River valleys. Geologically, the Jinbroken Range is formed of Albert Basalt and borders the property to the north and east, reaching its highest point at 453m on the north-eastern property boundary at the location known as 'Kerry'.

The most recent landholder had managed Tabooba for cattle grazing for a period of approximately 30 years, prior to the purchase by TMR in April 2022. Land management practices included maintaining cleared pastures on creek flood zones, stick-raking valleys and slopes in the higher country to remove tree regrowth and sowing of exotic, high-yield pasture grasses such as Rhodes grass (*Chloris gayana*) in the cleared areas. These areas were mapped during the ecological surveys as 'cleared', 'young regrowth' and 'mature regrowth' respectively. The cleared areas have been maintained in that condition for decades. The regrowth areas are subject to a re-clearing cycle of circa 5-7 years with the young regrowth areas having been re-cleared in 2020 and over-sown with exotic pasture grasses. The mature regrowth areas were to be re-cleared in 2021; however, the extended wet season prevented this action.

Fire has been used as a tool to reduce fuel loads and decrease risk of wildfire, control regrowth vegetation, and maintain a grassy understorey for cattle grazing beneath the woodland vegetation on higher slopes. Cool, mosaic pattern burning has been carried out since the 1980s. Cattle have not been fenced from watercourses and evidence of erosion and weed proliferation is apparent in watercourses on the lower slopes and alluvial plains. Weed infestation is present throughout the site, including around the base of koala food trees, which may prevent current greater utilisation. These areas would be managed to enhance the habitat for Koala and/or GHFF.

Figure 3 shows the areas of mapped remnant and regrowth vegetation, REs and core Koala habitat on the property and surrounding area.

Connectivity

Where Tabooba includes habitat of the Jinbroken Range to the east, remnant vegetation exists on both the offset property and adjoining properties. This forms a corridor of intact vegetation along the range to the north and south. The *Scenic Rim Regional Council Biodiversity Strategy 2015-2025* indicates that Tabooba is within existing 'core-node' habitat and links landscape along Jinbroken Range connecting to the south with 'core' habitat. Restoring and maintaining koala habitat connectivity between the riparian and ridgeline habitats of Tabooba would have significant benefits by enabling koalas to safely inhabit and move between the range of altitudinal habitats for feeding and breeding purposes and to seek refuge during periods of climatic extremes.

Figure 4 shows the location of Tabooba in relation to riparian features and state and regional biodiversity corridors.

Figure 2: Tabooba location and topography map

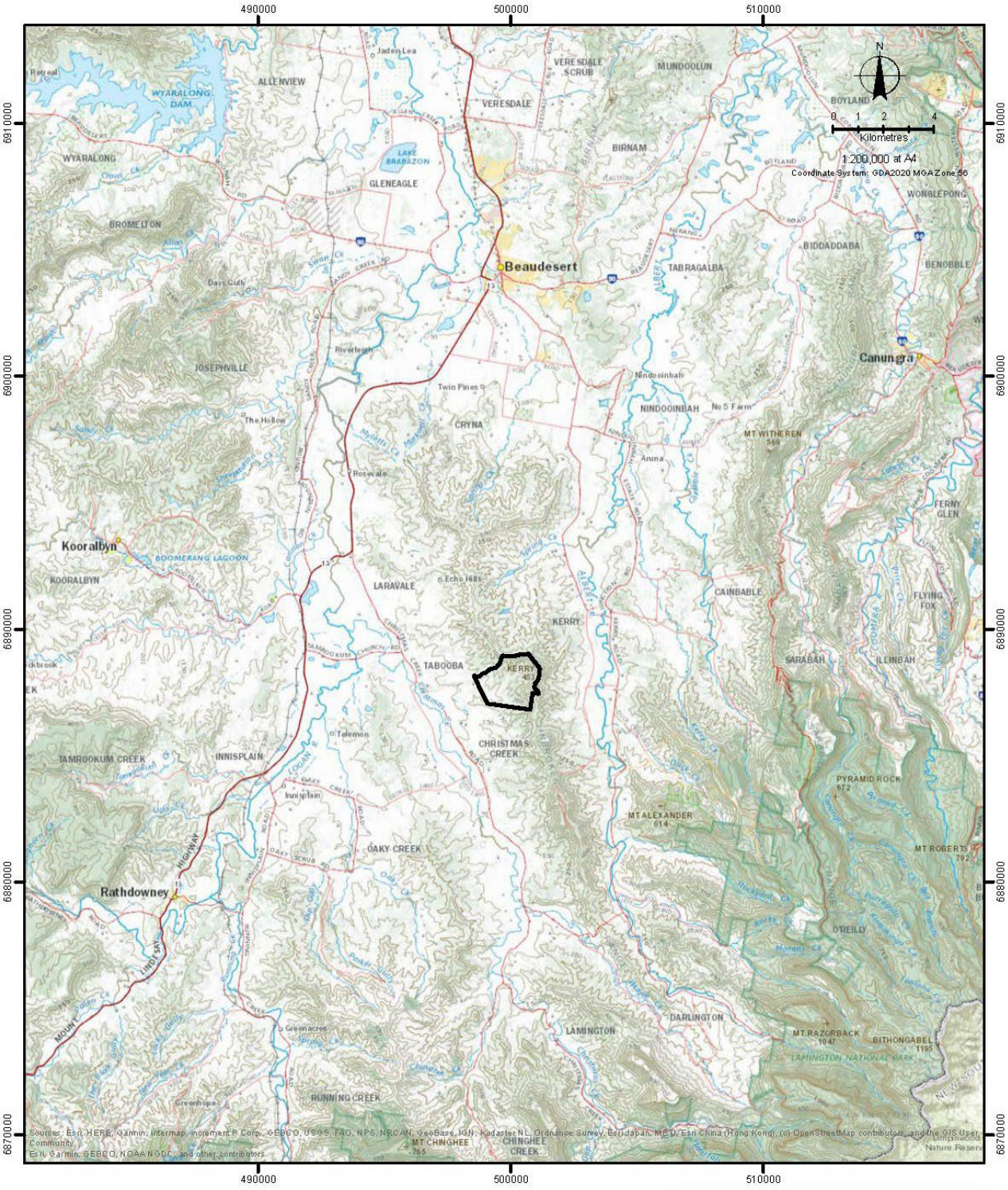
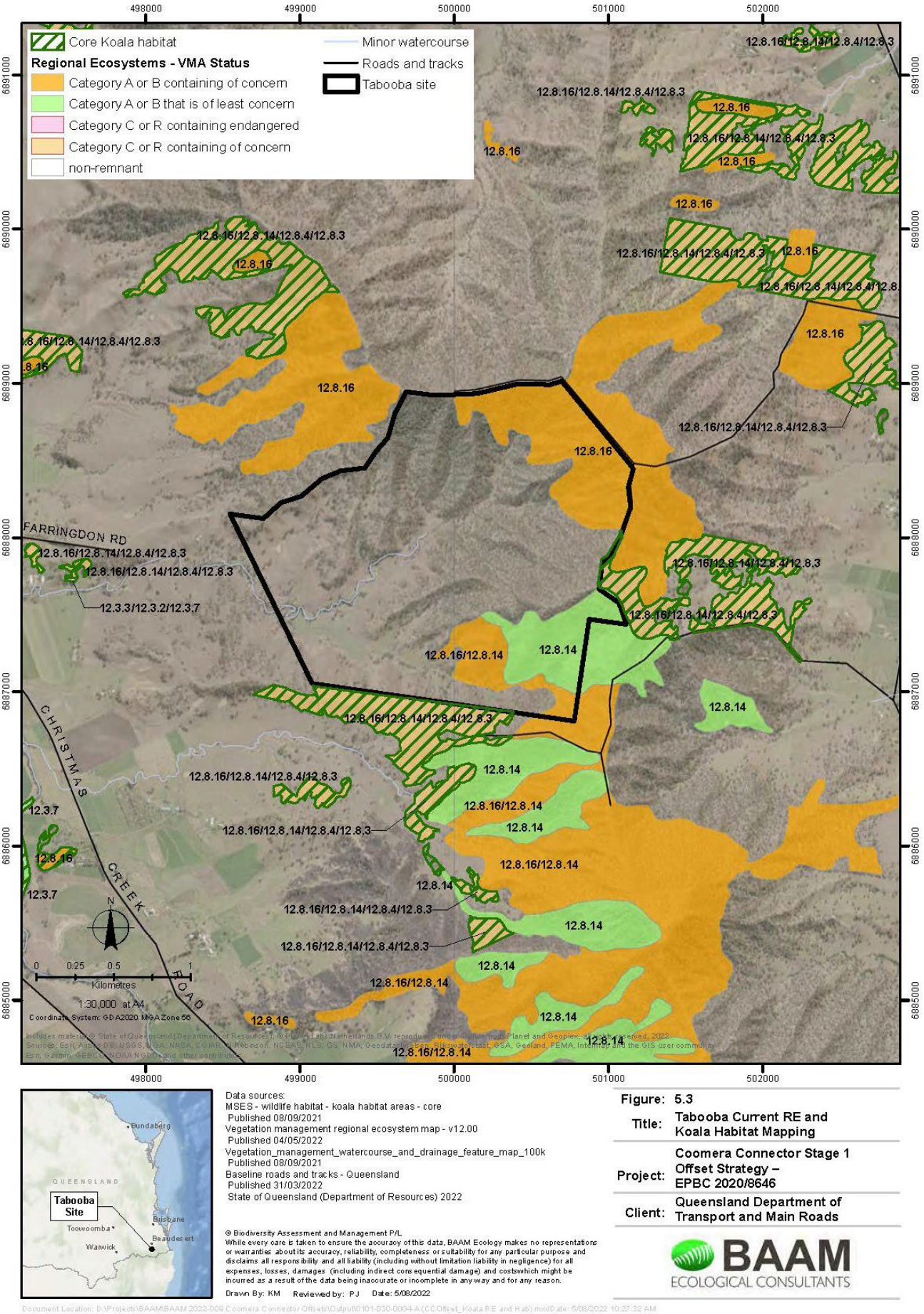


Figure 3: Tabooba – RE and Koala habitat mapping



Data sources:
MSES - wildlife habitat - koala habitat areas - core
Published 08/09/2021
Vegetation management regional ecosystem map - v12.00
Published 04/05/2022
Vegetation_management_watercourse_and_drainage_feature_map_100k
Published 08/09/2021
Baseline roads and tracks - Queensland
Published 31/03/2022
State of Queensland (Department of Resources) 2022

Drawn By: KM Reviewed by: PJ Date: 5/08/2022

Figure:	5.3
Title:	Tabooba Current RE and Koala Habitat Mapping
Project:	Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646
Client:	Queensland Department of Transport and Main Roads

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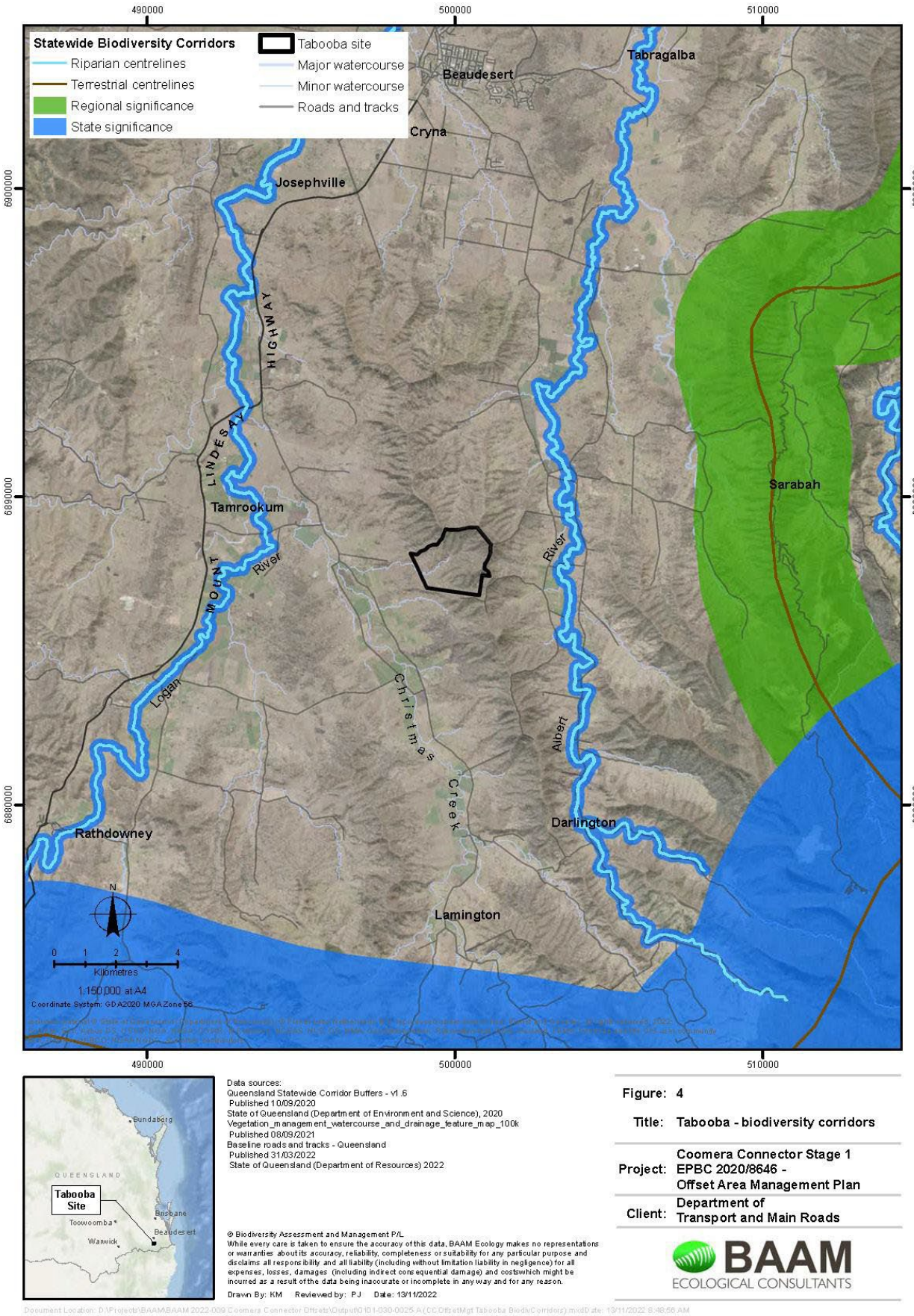
Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\00101-030-0004 A (CC Offset_Koala RE and Hab).mxd Date: 5/08/2022 10:27:32 AM

Figure 4: Tabooba – biodiversity corridors



Data sources:
Queensland Statewide Corridor Buffers - v1.6
Published 10/09/2020
State of Queensland (Department of Environment and Science), 2020
Vegetation_management_watercourse_and_drainage_feature_map_100k
Published 08/09/2021
Baseline roads and tracks - Queensland
Published 31/03/2022
State of Queensland (Department of Resources) 2022

Drawn By: KM Reviewed by: PJ Date: 13/11/2022

Figure:	4
Title:	Tabooba - biodiversity corridors
Project:	Coomera Connector Stage 1 EPBC 2020/8646 - Offset Area Management Plan
Client:	Department of Transport and Main Roads

BAAM ECOLOGICAL CONSULTANTS

Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0025-A (CC Offset Mgt Tabooba Biodiv Corridors).mxd Date: 13/11/2022 8:48:56 AM

3.1.2 Greenridge

Greenridge is located at 108 Green Meadows Road, Pimpama, approximately 3.5 km north-east of the northern extent of the action. Greenridge covers 407 ha in total and is comprised of 12 lots (see *Figure 5*):

- Lot 121 on RP903491 (28.43 ha)
- Lot 15 on SP145312 (61.71 ha)
- Lot 6 on RP50178 (60.58 ha)
- Lot 7 on RP50178 (26.70 ha)
- Lot 8 on RP50178 (37.70 ha)
- Lot 11 on RP50178 (15.68 ha)
- Lot 12 on RP50178 (16.28 ha)
- Lot 13 on RP50178 (54.61 ha)
- Lot 14 on RP50178 (19.99 ha)
- Lot 15 on RP50178 (40.66 ha)
- Lot 16 on RP50178 (14.37 ha)
- Lot 71 on W31402 (30.36 ha).

Greenridge is situated at the southern-most extent of a broader >100 km^2 area of agricultural land that exists between the Logan River in the north and McCoys Creek in the south. Agricultural land uses in the broader area are dominated by sugar cane production. Other land uses include extractive industries, including sand mining and hard rock quarrying, along with aquaculture enterprises and facilities for boating. This area is bound to the west by the M1, which is adjoined by industrial and residential development. The eastern boundary is the southern extent of Moreton Bay Marine Park including the Moreton Bay Ramsar Wetland, and there are patches of remnant vegetation along the coastline and associated with inlets, rivers and creeks. New residential developments are beginning to emerge along the coastline. Much of the area is less than 10 m above sea level.

The central to southern portions of Greenridge contains small ridges and hills up to 20 m above sea level and composed of sandy clays to stony lithosols derived from Neranleigh-Fernvale beds with colluvial deposits at the base of slopes. These higher areas are characterised by open eucalypt woodland supporting Koala and GHFF habitat. The north-east and north-west of Greenridge consist predominately of alluvial plains supporting a network of shallow alluvial channels draining into the Pimpama River and McCoys Creek. This area is comprised of poorly drained clays to sandy clays, derived from river alluvial, beach and estuarine sediments and supports a mosaic of aquatic and terrestrial vegetation types typical of low-lying coastal areas.

A considerable portion of Greenridge has been cleared in the past for agricultural purposes. The earliest available aerial imagery (from 1955 [8]) indicates the north-western portion of Greenridge was historically cleared of vegetation to facilitate sugarcane farming. Sugar-cane production appears to have ceased between 1978 and 1985. By 1989 Greenridge was being managed primarily for cattle grazing and slash pine plantation, as well as for recreational use by light aircraft. All vegetation on Greenridge was either cleared or substantially thinned and cattle grazing has been the predominant use to recent times.

Though most recently used for cattle grazing, Greenridge does not exhibit any signs of recent cattle usage. Pasture dominated by the exotic South African pigeon grass is heavily overgrown and infested with fireweed (prior to the fire in November 2022), which is toxic to livestock, indicative of little pastoral

[8] https://www.business.qld.gov.au/running-business/support-assistance/mapping-data-imagery/imagery/aerial-photography

management. Fencing has also been removed from areas once restricting cattle access to saltmarsh and mangrove communities in the central to southern portions of Greenridge.

Connectivity

Existing RE mapping for Greenridge is shown in *Figure 6*, indicating the presence of remnant REs 12.11.23, 12.3.20, and 12.3.5. Core Koala habitat is mapped over these REs on Greenridge, which adjoins other areas of core Koala habitat external to the Greenridge boundary to the north and south-west. The southern portion of Greenridge intercepts a mapped state biodiversity corridor and the north-eastern tip of Greenridge adjoins a state riparian corridor associated with the Pimpama River. The location of Greenridge within a regional biodiversity corridor is shown in *Figure 7*.

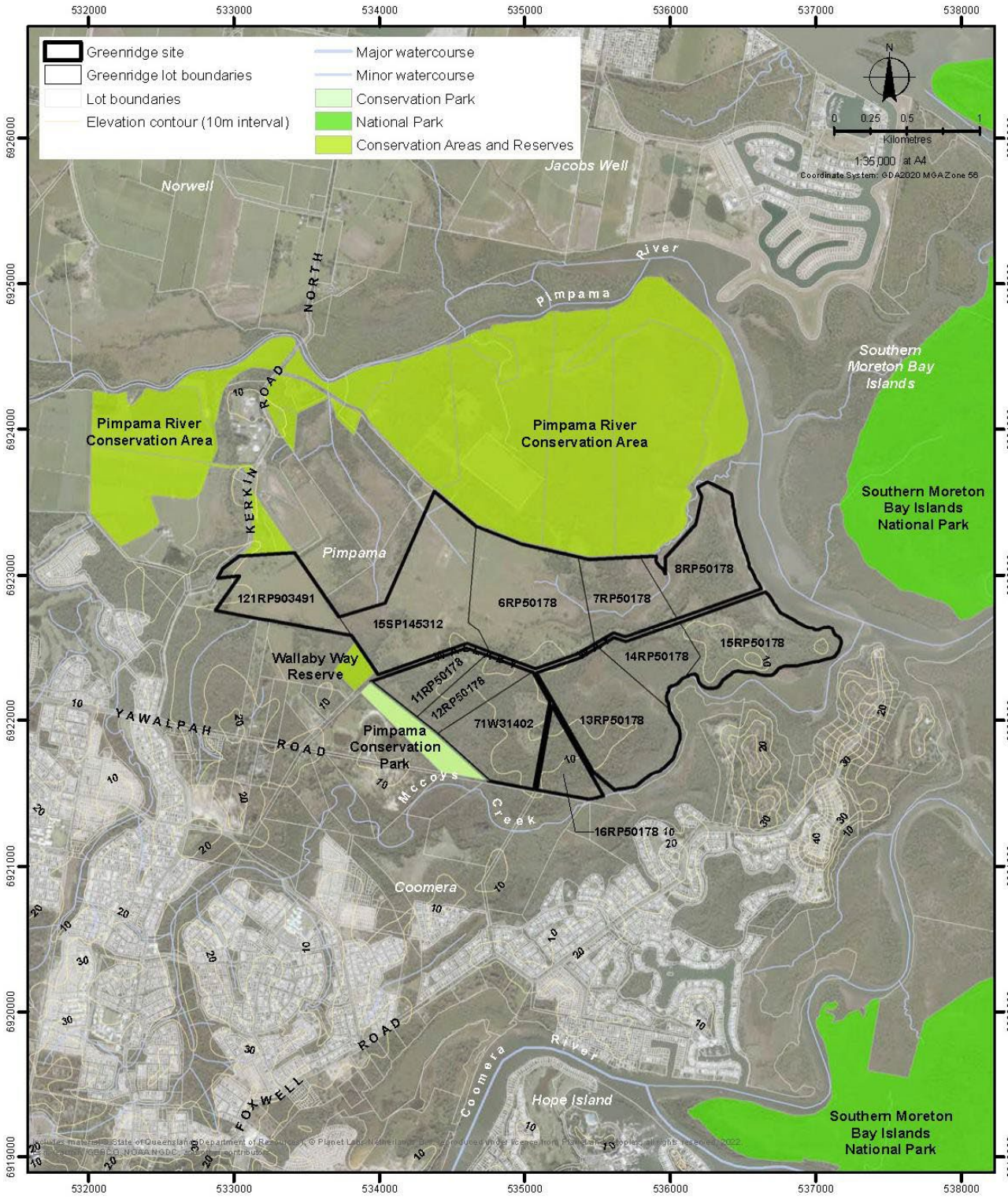
3.2 Suitability of the offset properties

The two properties are considered suitable to provide the values required to address the EOP principles. Consideration was also given to future property planning and any potential future use for the property to avoid the potential for conflicting land use pressures with the offset site.

The properties are suitable for locating the offsets for a number of reasons:

- The delivery of the offset will be close to the impact site.
- The offset area at Tabooba connects to remnant vegetation and Koala habitat along the Jinbroken Range (Figure 3).
- The offset area at Greenridge is located within a corridor of regional significance and has vegetation connectivity to the state significant corridor of the Pimpama River (*Figure 7*).
- The relevant field-verified biodiversity values are present on the offset properties.
- The property management objectives align with the offset management objectives, as the properties were purchased for the purpose of providing offsets for the action.
- There is potential for the future location of other offsets on the same properties for other projects, thus creating larger areas of biodiversity offsets and achieving a better environmental outcome.

Figure 5: Greenridge location map



Data sources:
Cadastral data - Queensland - by area of interest, Published 30/05/2022
Elevation contours - 10 metre interval, Published 26/08/2019
Vegetation management watercourse and drainage feature map (1:25000) – South East Queensland v5.0, Published 08/09/2021
MSES - Protected area - estates, Published 08/09/2021
Baseline roads and tracks - Queensland, Published 31/03/2022
State of Queensland (Department of Resources)

Drawn By: KM Reviewed by: PJ Date: 5/08/2022

Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0011-A(CC Offset_Greenridge_Topo).mxd Date: 5/08/2022 11:20:33 AM

Figure:	6.1
Title:	Greenridge Site Locality Features
Project:	Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646
Client:	Queensland Department of Transport and Main Roads

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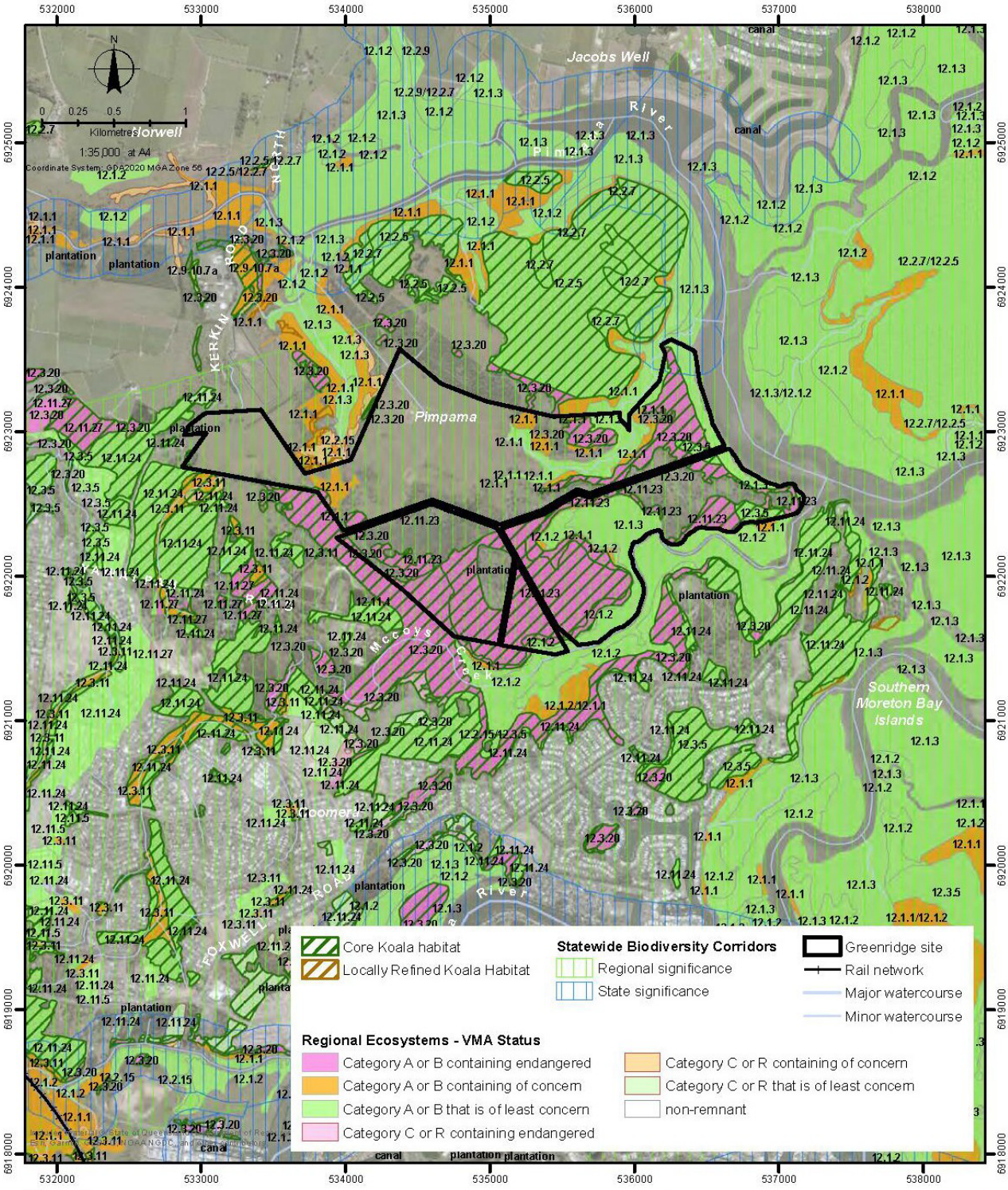
Figure 6: Greenridge – RE and Koala habitat mapping and biodiversity corridors



Data sources:
MSES - wildlife habitat - koala habitat areas - core and
MSES - wildlife habitat - koala habitat area - locally refined, Published 08/09/2021
Queensland Statewide Corridor Buffers - v1.6, Published 10/09/2020
Vegetation management regional ecosystem map - v12.00, Published 04/05/2022
Vegetation management watercourse and drainage feature map (1:25000) – South East Queensland v5.0, Published 08/09/2021
Baseline roads and tracks - Queensland, Published 31/03/2022
State of Queensland (Department of Resources) 2022

Figure:	6.4
Title:	Greenridge Current RE and Koala Habitat Mapping
Project:	Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646
Client:	Queensland Department of Transport and Main Roads

Drawn By: KM Reviewed by: PJ Date: 5/08/2022

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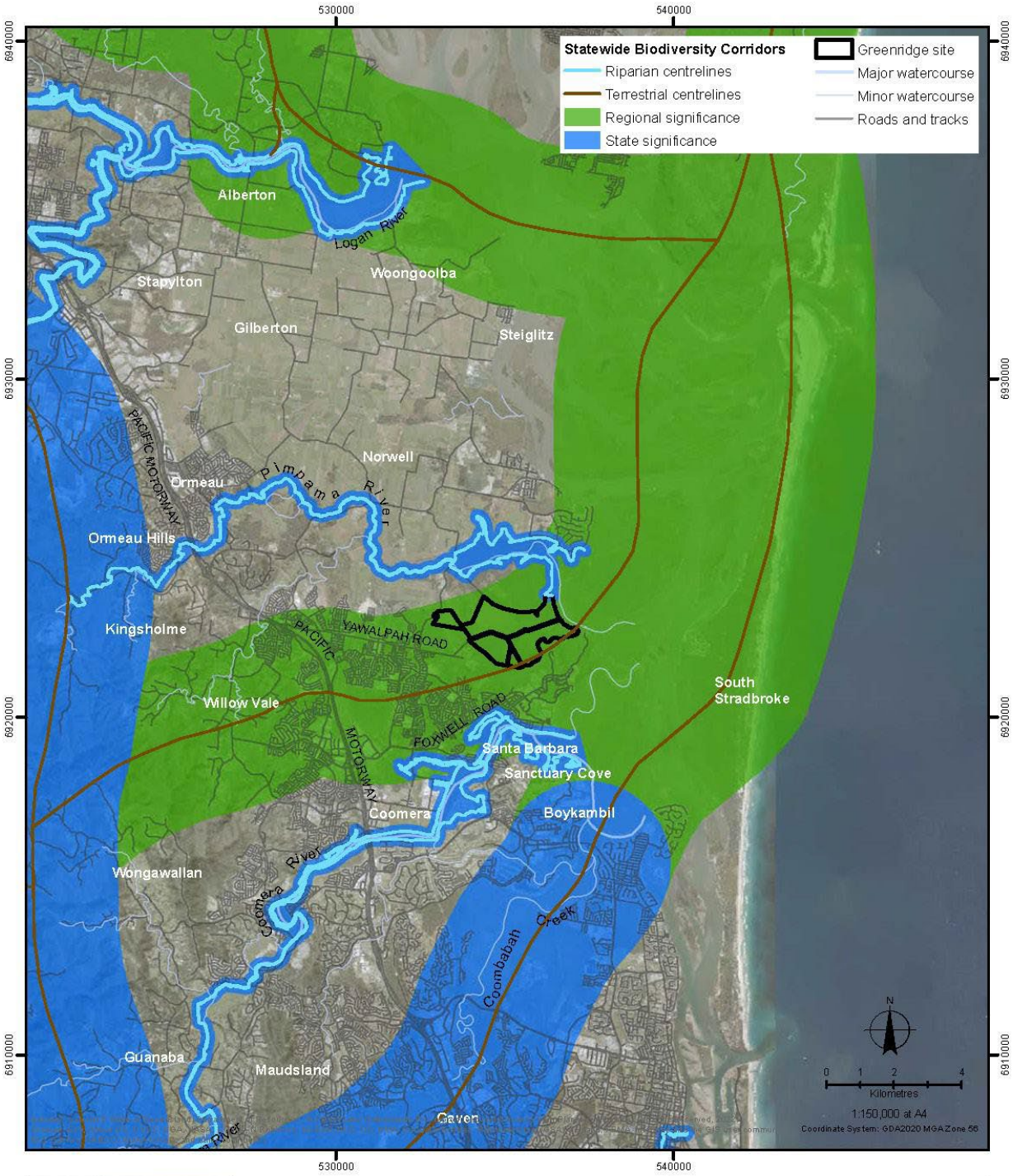
Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0014 A (CC Offset Greenridge Koala RE and Hab).mxd Date: 5/08/2022 11:29:54 AM

Figure 7: Greenridge – biodiversity corridors



Data sources:
Queensland Statewide Corridor Buffers - v1.6
Published 10/09/2020
State of Queensland (Department of Environment and Science), 2020
Vegetation_management_watercourse_and_drainage_feature_map_25k
Published 08/09/2021
Baseline roads and tracks - Queensland
Published 31/03/2022
State of Queensland (Department of Resources) 2022

Drawn By: KM Reviewed by: PJ Date: 13/11/2022

Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0026-A (CC Offset Mgt Greenridge Biodiv Corridors).mxd Date: 13/11/2022 9:20:26 AM

Figure:	7
Title:	Greenridge - biodiversity corridors
Project:	Coomera Connector Stage 1 EPBC 2020/8646 - Offset Area Management Plan
Client:	Department of Transport and Main Roads

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3.3 Coastal swamp oak TEC – offset requirements and attributes

3.3.1 Coastal swamp oak TEC – habitat requirements

In Queensland, the Coastal Swamp Oak TEC coincides with 2 REs:

- RE 12.1.1 (*Casuarina glauca* woodland on margins of marine clay plains).
- Areas within RE 12.3.20 (*Melaleuca quinquenervia*, *Casuarina glauca* +/- *Eucalyptus tereticornis*, *E. siderophloia* open forest on low coastal alluvial plains) where the canopy is dominated by *Casuarina glauca*.

The TEC occurs in coastal catchments at elevations up to 50m above sea level (**ASL**), typically less than 20m ASL, on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated. There are also minor occurrences on coastal dune swales or flats, particularly deflated dunes and dune soaks. It occurs on soils derived from unconsolidated sediments (including alluvium), typically hydrosols (grey-black clay-loam and/or sandy loam soils) and sometimes organosols (peaty soils). It may occur in transitional soils where shallow unconsolidated sediments border lithic substrates.

For an offset for the coastal swamp oak TEC to be successful, there are a number of habitat features and requirements to consider.[9] These considerations include:

- Patch size – larger areas are more resilient to edge effect disturbance such as weed invasion and the impacts of human activities
- Proximity to other remnant vegetation – areas of mosaic native vegetation provide a wider range of habitats that benefit diversity of flora and fauna
- Whether the patch is at the natural edge of its range, where there may be a reduction or absence of some threats, or may contain flora and fauna that have largely declined across the broader ecological community
- Whether the patch contains, or is capable of developing, good faunal habitat indicated by containing diversity of landscape, diversity of plant species and vegetation structure, diversity of age class, presence of movement corridors, mature trees (particularly those with hollows), logs, watercourses, etc.
- The presence of nationally or state-listed threatened species, and species richness
- Whether the patch contains relatively low levels of weeds and feral animals, or where these can be managed efficiently.

Threats to the coastal swamp oak TEC are detailed in *Table 5* in *Section 2.2* of this document. In summary, the principal threats to the TEC are:

- Clearing and fragmentation
- Weeds
- Invasive fauna
- Agricultural activities, in particular, grazing
- Inappropriate fire regimes.

[9] Coastal Swamp Oak Forest NSW and SEQ_ Approved Conservation Advice. Available at https://www.environment.gov.au/biodiversity/threatened/communities/pubs/141-conservation-advice.pdf

The management actions for the coastal swamp oak TEC offset area have been developed to specifically deal with these threats and are detailed in *Section 5*.

3.3.2 Field survey methodology for coastal swamp TEC offset areas

To assess the suitability of Greenridge for coastal swamp oak TEC offsets, habitat assessment was undertaken by BAAM Ecological Consultants in 2022. The assessment was undertaken by applying the methods of the *Guide to Determining Terrestrial Habitat Quality – Version 1.3* (Queensland Government 2020) in line with the habitat assessments undertaken at the Coomera Connector Stage 1 impact area for coastal swamp oak TEC (Planit, 2022, see *Appendix E*).

Greenridge was mapped into like Assessment Units (**AU**s), differentiated based on RE type and vegetation condition (remnant, advanced regrowth, young regrowth or cleared). Ground-truthing of a number of polygons of the RE types supporting *Casuarina glauca* was undertaken through applying the quaternary survey method of Neldner et al. (2017). Field observations and the use of historical aerial photography contributed to delineation of the regrowth vegetation.

Additional data were collected during field surveys to inform habitat quality scoring parameters for MNES not captured using the standard BioCondition method. These included the levels of *Casuarina glauca* canopy cover. This was also recorded to assist in identifying patches of coastal swamp oak that would qualify as the TEC.

3.3.3 Field survey results for coastal swamp TEC offset areas

The survey results describe each AU, as listed below:

- **AU1 REMNANT RE 12.1.1:** 14.2 ha. Remnant *Casuarina glauca* open forest. Wholly analogous with the coastal swamp oak TEC.
- **AU2 REGROWTH RE 12.1.1:** 5.16 ha. Regrowth *Casuarina glauca* open forest.
- **AU3 NON-REMNANT RE 12.1.1:** 22.03 ha. Non-remnant *Casuarina glauca* open forest (presently grassland).
- **AU4 REMNANT RE 12.3.20:** 28.22 ha. Remnant *Casuarina glauca*, *Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest. Where dominated by *Casuarina glauca* the community is analogous with the Coastal Swamp Oak TEC.
- **AU5 REGROWTH RE 12.3.20:** 4.74 ha. Regrowth *Casuarina glauca, Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest.
- **AU6 NON-REMNANT RE1 2.3.20:** 12.48 ha. Non-remnant *Casuarina glauca, Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest (presently grassland).

Five occurrences of remnant RE 12.3.20 (AU4) at Greenridge are proposed as part of the offset for this MNES (see *Table 6*). Field assessment has determined that each of these areas represents differing proportions of TEC (ranging from 50 to 100%). The represented proportions have been applied to the total nominated area of remnant RE 12.3.20 (28.22ha), reducing the total area available for the offset within the nominated remnant RE 12.3.20 patches to 22.78ha.

Three occurrences of regrowth RE 12.3.20 (AU5) at Greenridge are proposed to offset the TEC, and all have been ground-truthed. Two were assessed as 100% representative of the TEC and one was 10% representative of the TEC. The represented proportions have been applied to the total nominated area of regrowth 12.3.20 (4.74ha), maintaining the total area available for the offset within the nominated regrowth RE 12.3.20 patches at 4.74ha.

For the non-remnant areas of RE 12.3.20 proposed for offsetting the TEC, all have been ground-truthed at 90-100% TEC. These proportions have been applied to the total area of non-remnant RE 12.3.20, reducing the total area to be considered to provide the TEC offset to 12.48ha.

Table 6: Coastal swamp oak TEC at the offset site

Property	RE	Assessment unit	Type of vegetation	Area of offset (ha)
Greenridge	12.1.1	AU1	Remnant	14.20
	12.1.1	AU2	Regrowth	5.16
	12.1.1	AU3	Non-remnant (cleared)	22.03
	12.3.20	AU4	Remnant	28.22
	12.3.20	AU5	Regrowth	4.74
	12.3.20	AU6	Non-remnant	12.48
			Total:	**86.83**

The quality scores for each of these AUs is shown in *Table 16*.

The full set of raw BioCondition survey data for Greenridge is provided in *Appendix I*. The HQS tables for each AU within the coastal swamp oak TEC offset areas are provided in *Appendix J*.

3.3.4 Ecological benefits of the proposed coastal swamp oak TEC offsets

At Greenridge the most significant impacts on ecosystem health are the result of feral pig damage and weed invasion, along with maintenance of cleared and weed-infested paddocks adjacent to remnant and regrowth vegetation. The current level of feral pig activity would not be managed without the offset, which will be detrimental to the survival of canopy species within the coastal swamp oak TEC – as well as suppressing shrub regrowth and ground species cover.

Removal and ongoing control of feral pigs at Greenridge will allow recovery of the ground surface within the TEC, contributing to the health and growth of existing trees that have been subject to significant root disturbance through pig digging, and allow ground cover, shrub layer and natural Ecologically Dominant Layer (EDL) recruitment to occur unhindered. The nominated non-remnant (cleared) patches of RE 12.1.1 at Greenridge will be planted with *Casuarina glauca*, which has a moderate-high growth rate. The species is commonly used overseas to stabilise soil and create windbreaks. A study by Goel and Behl (2005) recorded average height of plants in an 8-yr-old trial of *Casuarina glauca* of 1033.3 ± 270cm, which is 83% of the benchmark height for RE 12.1.1.

Given the planting at Greenridge will be in ideal conditions for the species, growth rates are likely to be considerably higher as evidenced by the success of replanting *Casuarina glauca* in the adjacent Pimpama River Conservation Area. The revegetation plan is provided at *Appendix C*.

Management of Greenridge for agricultural uses has introduced a range of non-native species, also present in the surrounding landscape, which will continue to infiltrate natural areas, impacting a range of habitat quality measures without management under the offset. Without fire management to benefit ecosystems, fire exclusion may affect the health of coastal swamp oak communities which need disturbance to maintain structure whereas the risk of severe wildfire increases as litter builds. Non-remnant areas will be rehabilitated to reflect the pre-clear REs and are predicted to reach benchmark RE status and TEC status for coastal swamp oak in 20 years under appropriate planning and management.

The proximity of the offset areas to nearby areas of remnant vegetation (including the Pimpama Conservation Park and the Pimpama River Conservation Area) is of benefit to the likelihood of success of the offset. The offset property itself will form a large part of a buffer area between the highly developed residential areas to the south and these conservation areas. This is further enhanced by the large size of the offset property itself, which in total is approximately the same area as the Pimpama River Conservation Area. Additionally, access restrictions that will apply to the property, along with the comprehensive proposed management actions to control weeds and feral animals will enable the offset to meet the habitat requirements.

The offset area is shown in *Figure 8*.

3.3.5 OAG inputs for coastal swamp oak TEC

Inputs for DCCEEW's Offset Assessment Guide (**OAG**) were derived from the survey results described above.

The risk of loss was derived from Appendix One of the document titled *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act.*[10]

The Offsets Assessment Guide requires an estimation of the projected improvements in habitat quality that can be achieved over 20 years through management, along with an indication of the level of confidence in these projections. The time to ecological benefit is set at 10 years for remnant and advanced regrowth communities and 20 years for other regrowth and non-remnant communities, with 85% confidence that the goals for offset area habitat quality will be achieved. Periods of 10 years for remnant and 20 years for regrowth and non-remnant communities are required to realise the results of management actions that will improve habitat quality – of these actions, removal of invasive weeds and implementation of controlled burning to prevent damaging wildfire, encourage EDL recruitment and improve ground cover quality are predicted to raise the quality of the remnant and advanced regrowth ecosystems close to benchmark levels.

At present, the quality of habitats at the Greenridge property are impacted by weeds. Of the 36 introduced plants recorded from within the habitat quality survey plots at the Greenridge property), 2 are weeds of national significance (*Lantana camara* and *Asparagus aethiopicus*) and 19 were identified by Batianoff and Butler (2002) as among the 200 most invasive naturalised plants in South East Queensland, selected from 1060 naturalised taxa.[11] Within the survey plots at Greenridge there was an average of 29.25% non-native cover.

Nationally exotic species account for about 15% of flora (Department of Agriculture, Fisheries and Forestry, 2024). Weeds are known to compete with native species for space, light, water and nutrients, and also suppress and out-compete mid-storey and canopy trees (Department of the Environment, 2011), affecting the structure and function of land-based and aquatic ecosystems, and impacting negatively on native fauna and flora. Nineteen of 20 studies on weed impact in Australia reviewed by Adair and Groves (1998) demonstrated a decline in either species richness, canopy cover or frequency of native species. One of the reviewed studies (Hester & Hobbs. 1992) found weed presence reduced percent cover of natives and reduced seed production in shrublands and woodlands, with removal of weeds resulting in a 3-fold increase in native cover.

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[10] Centre of Biodiversity and Conservation Science, School of Earth and Environmental Science, The University of Queensland, Brisbane. (2017) https://www.nespthreatenedspecies.edu.au/media/zpyajjq1/5-1-guidance-for-deriving-risk-of-loss-report_2017_low-res.pdf

[11] Jones, P, pers. comms, (2024)

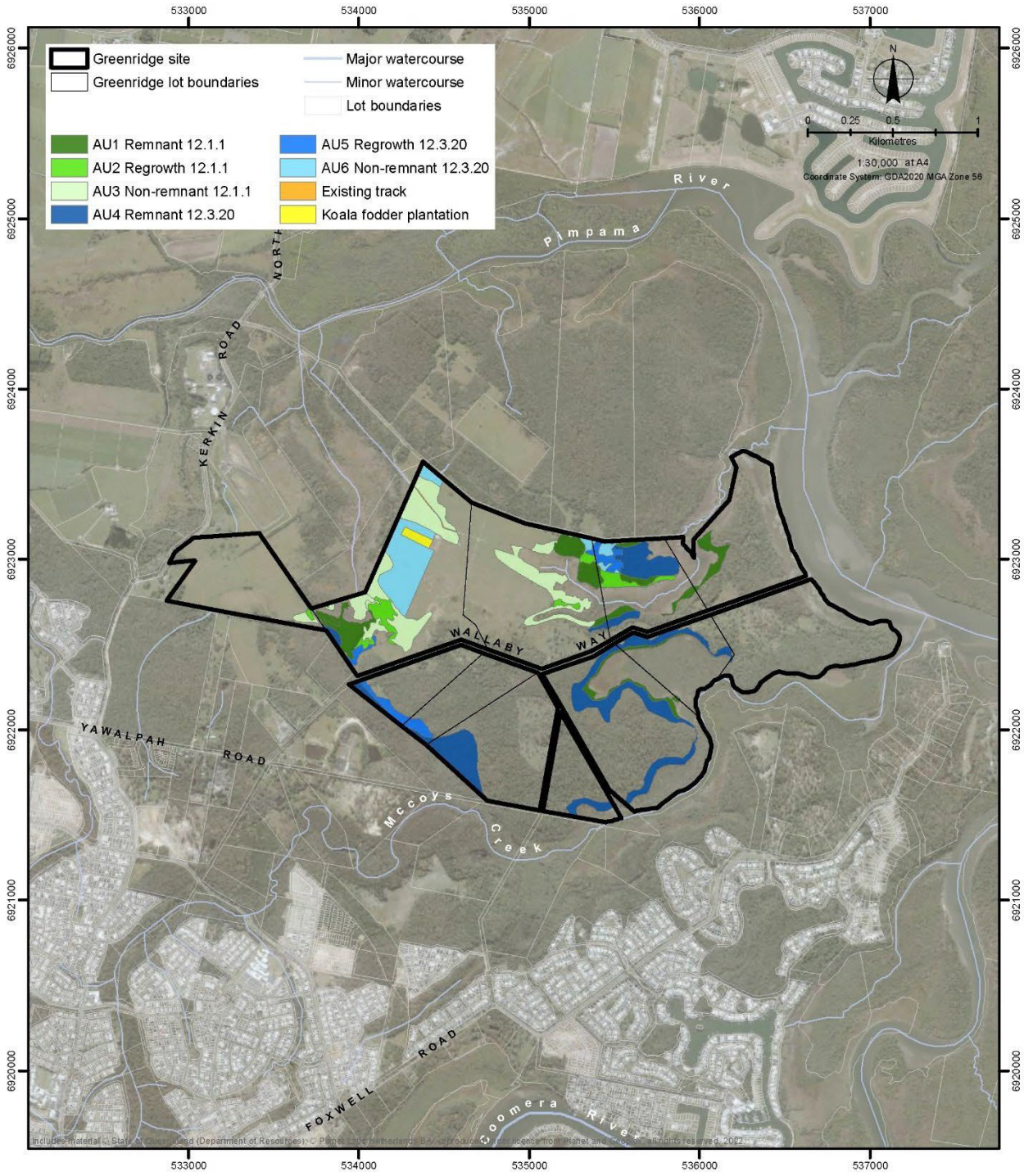
Weeds can also increase the biomass of ecosystems leading to more intense bushfires, changing the composition and structure of native vegetation (Invasive Plants and Animal Committee, 2016).

Greenridge is subject to invasion by exotic grasses. At Greenridge, South African pigeon grass (*Setaria sphacelata*) is a dominant species of open spaces. The species is regarded as an environmental weed in Queensland, New South Wales and Western Australia. It can form dense stands preventing natural plant regeneration and can transform infested areas into open badlands, with potential to invade wetland areas, reducing access for endangered birds (Brisbane City Council, 2024).

Control and removal of lantana and invasive introduced grasses will result in long term positive ecosystem change – by increasing species richness, abundance and recruitment (for lantana, see Gooden et al.,2009) and significantly reducing the risk of intense wildfire. Under these conditions there is high (85%) confidence that the quality of existing ecosystems will be raised to benchmark levels. An additional benefit of the intended weed management is the reestablishment of habitat connectivity for flora and fauna that are impeded by invasive species (Godfree et al. 2017).

The OAG outputs are provided in *Appendix M*.

Figure 8: Coastal Swamp Oak TEC offset area - Greenridge



Data sources:
Cadastral data - Queensland - by area of interest, Published 30/05/2022
Vegetation management watercourse and drainage feature map (1:25000) – South East Queensland v5.0, Published 08/09/2021
Baseline roads and tracks - Queensland, Published 31/03/2022
State of Queensland (Department of Resources)

Figure:	**10.1**
Title:	**Greenridge offsets for Coastal Swamp Oak TEC**
Project:	**Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646**
Client:	**Queensland Department of Transport and Main Roads**

Drawn By: KM **Reviewed by: PJ** **Date: 6/02/2024**

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Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0021-H (CCOffset Greenridge_Casuarina glauca Offset).mxdDate: 6/02/2024 4:10:28 PM

3.4 Koala habitat – offset requirements and attributes

3.4.1 Koala habitat requirements

Koalas are tree-dwelling, obligate folivores (leaf eaters) with a highly specialised diet. The koala's diet is defined by the availability and palatability of a limited variety of *Eucalyptus*, *Corymbia* and *Angophora* species. Koalas are nocturnal and spend significant periods of time moving across the ground between food and shelter trees. Movement increases in the breeding season (typically September to February) (Melzer & Tucker 2011). Koalas are reported to utilise more than 400 different species of tree for their food and habitat requirements with different tree species varying by habitat type and location across their range. The natural range of the koala is determined by specialist food, habitat and environmental requirements. Typically, this includes forests and woodlands dominated by *Eucalyptus* species (Melzer et al. 2000). The koala's home range (the area an individual needs to survive) is highly variable and dependant on life history stage, soil fertility, habitat quality and nutritional requirements.

Biophysical habitat attributes for the koala include places that contain the resources necessary for individual foraging, survival (including predator avoidance), growth, reproduction and movement. The total amount of resources (including habitat attributes) and how they are arranged in the landscape influence the viability of metapopulations and processes.

Threats to the koala are detailed in *Table 5* in *Section 2.2* of this document. In summary, the principal threats to the species are:

- Climate change driven processes, including loss of climatically suitable habitat, and increased frequency and intensity of heatwaves and droughts
- Human related activities such as clearing and fragmentation of habitat, and mortality associated with vehicles and dogs
- Disease, in particular, koala retrovirus.

The management actions for the koala offset areas have been developed to promote the desired habitat attributes described above, and specifically deal with the threats to the species. These management actions are detailed in *Section 5*.

3.4.2 Field survey methodology for koala offset areas

Tabooba – flora surveys

To assess the suitability of Tabooba for koala offsets, habitat assessment and BioCondition surveys were undertaken in May 2022 to compare with the habitat quality identified in the proposed action corridor. This applied the methods of the *Guide to Determining Terrestrial Habitat Quality – Version 1.3* (Queensland Government 2020) in line with the habitat assessments undertaken in the proposed action corridor for koala (Planit 2022; see Appendix F), as well as per *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland* (Eyre et al., 2015); and *Method for the establishment and survey of reference sites for BioCondition, Version 2.0* (Eyre, et al. 2011) using the most recent Queensland Herbarium Biocondition Benchmarks.

The site vegetation mapping was ground-truthed, compared to satellite imagery and then adjusted accordingly. Due to the different ages of regrowth on the property, regrowth vegetation was divided into the following categories:

- Advanced regrowth: areas supporting a continuous canopy in aerial imagery that was indistinguishable from areas mapped as remnant; and

- Young regrowth: areas supporting a broken canopy with scattered taller trees, but generally dominated by scattered smaller trees as evident in satellite imagery.

This information was also used to determine the number of transects in each AU (which is the vegetation type and condition) to fulfill the recommendations provided in the BioCondition Framework.

Tabooba – fauna surveys

Koala were surveyed at Tabooba in both March and May 2022 by Spot Assessment Technique (SAT; as per Phillips and Callaghan, 2011) to determine localised levels of habitat use by koala, and thermal-imaging drone surveys to gather baseline koala density data in areas that were difficult and/or impossible to survey by foot.

Koala SAT surveys, including searching for individuals in trees and scats within 1m of the base of suitable forage trees, were undertaken in accessible locations on the property on 17 March 2022 and 6-7 May 2022. The nine SAT surveys encompassed 279 koala food trees of *Angophora leiocarpa, Eucalyptus crebra, E. tereticornis, E. melliodora, Lophostemon confertus, Corymbia intermedia* and *C. tessellaris*. These surveys were undertaken predominantly within advanced and young regrowth vegetation, as remnant vegetation on the steeper slopes was relatively inaccessible due to very wet conditions and with dense lantana and/or too steep to survey safely. There was only one site where a SAT survey could be undertaken in riparian vegetation as the channel was relatively shallow and erosion had reduced the amount of weed cover.

Thermal koala surveys utilising a drone over Tabooba were undertaken in March 2022 and May 2022. The area was divided into discrete search polygons and each area was systematically searched using a thermal camera. In the March survey, the drone covered an area of approximately 200 ha and detected 2 koalas. The area droned was limited by the need to keep line of sight of the drone and more importantly, the inability to access areas due to the very wet conditions. In the May survey, the drone was able to be operated from further inside the property, reaching higher into the range and covering an area of approximately 107 ha of habitat.

Greenridge – flora surveys

Utilising the same approach as had been used at Tabooba, the site vegetation mapping for Greenridge was ground-truthed, compared to satellite imagery and then adjusted accordingly. Greenridge was then mapped into like AUs, differentiated based on RE type; and vegetation condition (remnant, advanced regrowth, young regrowth or cleared). Standard BioCondition surveys record canopy cover by measuring the vertical projection of canopy intercepting a 100m transect line (Eyre et al. 2015). To capture the proportion of the canopy comprised of koala food trees, these species were distinguished separately from other canopy species when recording canopy cover over the 100m transect. Distances of the koala tree canopies over the 100m transect were summed and then calculated as a proportion of the total canopy cover (koala tree cover plus non-koala tree cover, less any overlaps).

Greenridge – fauna surveys

SAT surveys and strip transects in general accordance with Dique et al. (2003) were undertaken to measure localised levels of habitat use by koalas to gather baseline koala density data. Seven SAT surveys and 8 strip transect surveys were carried out on Greenridge on 30 June, 1 July, 27 July and 3 August 2022. The results of two of each survey type, undertaken on 27 July and 3 August, are reported as these were the only sites relevant to a proposed koala offset AU4 (remnant RE 12.3.20).

Thermal-imaging drone surveys of the Pimpama River Conservation Area and Greenridge were conducted by EVE over 13 nights from 2 December 2021 to 10 February 2022, with 6 of those nights focused on Greenridge. All areas of koala habitat were surveyed, except for 2 small areas on Greenridge (approximately 9.5 ha in total) where site terrain made it difficult to maintain visual line of sight of the drone (a Civil Aviation Safety Authority requirement). The area was divided into 6 discrete search polygons and each area was systematically searched in an 'up-and-back' lawn-mower pattern, using a dual optical and thermal camera. Thermal heat signatures suggestive of koalas were investigated to positively identify the origin of the heat source.

3.4.3 Field survey results for koala offset areas

Tabooba

The field flora surveys resulted in AUs described as:

- **AU1 REMNANT RE 12.8.16:** 49.84 ha. Remnant *Eucalyptus crebra*, *E tereticornis* +/- *Angophora subvelutina* open forest.
- **AU2 ADVANCED REGROWTH RE 12.8.16:** 145.02ha. Advanced regrowth of open forest dominated by E*ucalyptus tereticornis* subsp. *basaltica*, *E. crebra* +/- *Corymbia tessellaris*, *C. intermedia*. Occasional relictual trees present.
- **AU3 YOUNG REGROWTH RE 12.8.16:** 48.10 ha. Young regrowth open forest with occasional emergent relictual trees. Dominant species include *Eucalyptus crebra*, *E. tereticornis* and *C. tessellaris*.
- **AU4 REMNANT RE 12.8.14:** 50.62 ha. Remnant open forest dominated by *Eucalyptus melliodora, Eucalyptus tereticornis* subsp. *basaltica*, *E. eugeniodes*, *Angophora subvelutina* and *C. intermedia*.
- **AU5 ADVANCED REGROWTH RE 12.8.14:** 19.81 ha. Advanced regrowth of *Eucalyptus eugeniodes, E. tereticornis* subsp *basaltica*, *Eucalyptus melanophloia* open forest.

These AUs, together with the koala offset AUs from Greenridge, are summarised in *Table 7* in *Section 3.4.4*.

Koala SAT survey results indicated that the surveyed habitat is categorised as 'low-use', with <22.52% scat evidence. However, the results are likely to be a significant underestimation of the koala activity level on the property, due to the challenges with applying this survey method in such steep and complex terrain. Phillips and Callaghan (2011) suggest that low koala activity is expected in the west of the species' East Coast range in areas receiving less than 600 mm annual rainfall. The local area receives over 900 mm annual rainfall and should therefore fall into the Phillips and Callaghan (2011) category of East Coast medium-high Koala activity.

The thermal imaging koala surveys via drone resulted in 2 individuals being detected in the March survey. One individual was recorded just outside of the property boundary in the north-west within mapped remnant RE 12.8.16, and the other in the north-western quarter of the property within AU2 (RE 12.8.16 advanced regrowth). Allowing for a detection probability of 90%, EVE (2022a) estimated the property probably supports four or five koalas (a density of 0.01-0.013 koalas/ha).

For the May survey, the drone was able to be operated from further inside the property, reaching higher into the range and covering an area of approximately 107 ha of habitat. Eight koalas were detected, mostly on the mid-upper slopes of the range in the following AUs:

- 2 koalas in AU1 RE12.8.16 remnant
- 2 koalas in AU2 RE12.8.16 advanced regrowth
- 3 koalas in AU4 RE12.8.14 remnant

- one koala in AU5 RE12.8.14 advanced regrowth.

Allowing for a detection probability of 90%, EVE (2022b) calculated a population density of 0.08 koalas/ha based on the May survey event. EVE (2022b) noted that the presence of such an abundance of koalas on the mid-upper slopes of the ridge was somewhat unexpected given that more nutrient-rich geology undoubtedly occurs on the lower slopes and flats. However, the lower slopes and flats are largely cleared and are managed for beef cattle production.

The full set of raw BioCondition survey data for Tabooba is provided in *Appendix H*. The HQS tables for each AU within the koala offset areas are provided in *Appendix K*.

Greenridge

Existing RE mapping for Greenridge indicates the presence of remnant REs 12.11.23, 12.3.20, and 12.3.5. Core koala habitat is mapped over these REs on Greenridge, which adjoins other areas of core koala habitat external to the Greenridge boundary to the north and south west.

RE 12.11.23 is described as *Eucalyptus pilularis* open forest on coastal metamorphics and interbedded volcanics. Other canopy species include *E. microcorys, Corymbia intermedia, Angophora woodsiana, E. tindaliae* and *E. carnea*. Consideration of the dominant canopy species indicates the RE has high value for koala (DES 2021).

RE 12.3.20 is described as *Melaleuca quinquenervia, Casuarina glauca* +/- *Eucalyptus tereticornis*, *E. siderophloia*, *M. styphelioides* open forest on low coastal alluvial plains. Consideration of the dominant canopy species indicates the RE has medium value for koala (DES 2021).

RE 12.3.5 is described as *Melaleuca quinquenervia* open forest on coastal alluvium. Other tree species that may be present as scattered individuals or clumps include *Lophostemon suaveolens, Eucalyptus robusta, E. tereticornis, E. bancroftii, E. latisinensis, Corymbia intermedia, Melaleuca salicina, Livistona australis, Casuarina glauca*, and *Endiandra sieberi*. Consideration of the dominant canopy species indicates the RE has medium value for koala (DES 2021).

No koala scats were recorded from the 3 SAT surveys undertaken within AU4 and no koalas were recorded from the 3 strip transects undertaken within AU4.

The thermal camera surveys detected the presence of 14 koalas within the remnant, regrowth and non-remnant RE 12.3.20 areas on Greenridge.

The full set of raw BioCondition survey data for Greenridge is provided in *Appendix I*. The HQS tables for each AU within the koala offset areas are provided in *Appendix K*.

3.4.4 Ecological benefits of the proposed koala offsets

Tabooba

Tabooba is well located to provide valuable koala habitat on the ranges, lower slopes and the wetter and more fertile lower slopes and flood zones of the creeks, which are currently cleared and are similarly cleared in the surrounding landscape where beef cattle production dominates land use. Riparian habitats provide important refuge for koalas during times of drought (Reed and Lunney 1990), facilitate local movement (Davies et al. 2013), and are important for long distance dispersal (McAlpine et al. 2006a and b; Norman et al. 2019), with koala persistence within riparian areas supported by the presence of intact non-riparian habitat (Smith et al. 2013).

Restoring and maintaining koala habitat connectivity between the riparian and ridgeline habitats of Tabooba would have significant benefits by enabling koalas to safely inhabit and move between the range of altitudinal habitats for feeding and breeding purposes and to seek refuge during periods of climatic extremes.

The Scenic Rim Regional Council Biodiversity Strategy 2015-2025 shows the location of Tabooba in relation to existing habitats and landscape linkages. Tabooba lies within an area mapped as a 'core node', taking in much of the vegetation of the Jinbroken Range and connecting to the south with core habitat termed by Scenic Rim Regional Council as the 'Lamington Core'.

The remnant REs 12.8.16 and 12.8.14 are located on the high ridges and slopes within and adjacent to Tabooba. RE 12.8.16 is regarded as high value for koala (DES 2021) and RE 12.8.14 is regarded as medium value for koala (DES 2021). Tabooba is bordered to the east and south by habitat mapped by the Queensland Government as core koala habitat over the REs mapped as 12.8.16/12.8.14/12.8.4/12.8.3. REs 12.8.4 and 12.8.3 are both notophyll vine forest REs and these habitats are not considered to represent important koala habitat.

Greenridge

The ecological values of portions of Greenridge are recognised in the Gold Coast City Plan, where the eastern half of Greenridge is zoned for conservation values and forms part of a broader conservation node. The eventual inclusion of an additional 150 ha of currently 'Rural' zoned land on Greenridge into this conservation node in the form of offsets for koalas and other matters would increase available habitat for koalas. For the entire site, including those locations currently supporting remnant and regrowth vegetation, management as offset habitat would implement long-term measures to reduce threats to koalas, such as controlling European foxes and wild dogs and managing lantana where it is a barrier to koala movement and a risk for uncontrolled bushfire.

Movement of koalas between Greenridge and the adjacent state-mapped core koala habitat in the 355 ha Pimpama River Conservation Area (**PRCA**) to the north is known anecdotally from previous camera trap surveys. A tributary of the Pimpama River which separates vegetated eastern and central portions of Greenridge from the PRCA, confines koala movement between these areas to the terrestrial habitats in the western portion of Greenridge. At present, the cleared paddocks in the western portion are mostly treeless and support long pasture grasses and dense *Setaria sphacelate*, which may discourage koala movement though these areas and expose koalas to high risk of predation. The western boundary of Greenridge is adjacent to the 14 ha Pimpama Conservation Park, the 5ha Wallaby Way Reserve, partly treed land zoned for rural uses and a local government sewerage treatment facility, which are ultimately connected to the PRCA and likely form the predominant passage between Greenridge and the PRCA for koalas.

Future restoration of koala habitat in cleared portions of Greenridge would significantly improve connectivity between exiting remnant habitat and the PRCA.

The AUs comprising the offset areas for koala on Tabooba and Greenridge are shown in *Table 7*, and the offset areas at the 2 properties are shown in *Figure 9* and *Figure 10*.

Table 7: Koala habitat at the offset sites

Property	RE	Assessment unit	Type of vegetation	Area of offset (ha)
Tabooba	12.8.16	AU1	Remnant	49.84
		AU2	Advanced regrowth	145.02
		AU3	Young regrowth	48.10
	12.8.14	AU4	Remnant	50.62
		AU5	Advanced regrowth	19.80
Greenridge	12.3.20	AU4	Remnant	28.22
		AU5	Regrowth	4.74
		AU6	Non-remnant	12.48
			Total:	**358.82**

3.4.5 OAG inputs for koala offsets

Inputs for DCCEEW's OAG were derived from the survey results described above.

The risk of loss was derived from Appendix One of the document titled *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act.*[12]

The Offsets Assessment Guide requires an estimation of the projected improvements in habitat quality that can be achieved over 20 years through management, along with an indication of the level of confidence in these projections. The time to ecological benefit is set at 10 years for remnant and advanced regrowth communities and 20 years for other regrowth and non-remnant communities, with 85% confidence that the goals for offset area habitat quality will be achieved. Periods of 10 years for remnant and 20 years for regrowth and non-remnant communities are required to realise the results of management actions that will improve habitat quality – of these actions, removal of invasive weeds and implementation of controlled burning to prevent damaging wildfire, encourage EDL recruitment and improve ground cover quality are predicted to raise the quality of the remnant and advanced regrowth ecosystems close to benchmark levels.

At present, the quality of habitats at the Greenridge and Tabooba properties are impacted by weeds. Of the 36 introduced plants recorded from within the habitat quality survey plots at the Greenridge property, 2 are weeds of national significance (*Lantana camara* and *Asparagus aethiopicus*) and 19 were identified by Batianoff and Butler (2002) as among the 200 most invasive naturalised plants in South East Queensland, selected from 1060 naturalised taxa. Within the survey plots at Greenridge there was an average of 29.25% non-native cover. Of the 43 introduced plants recorded from within the habitat quality survey plots at the Tabooba property, one is a weed of national significance (*Lantana camara*) and 17 were identified by Batianoff and Butler (2002) as among the 200 most invasive naturalised plants in South East Queensland. Within the survey plots at Tabooba there was an average of 20.5% non-native cover.

Nationally exotic species account for about 15% of flora (Department of Agriculture, Fisheries and Forestry, 2024). Weeds are known to compete with native species for space, light, water and

[12] Centre of Biodiversity and Conservation Science, School of Earth and Environmental Science, The University of Queensland, Brisbane. (2017) https://www.nespthreatenedspecies.edu.au/media/zpyajjq1/5-1-guidance-for-deriving-risk-of-loss-report_2017_low-res.pdf

nutrients, and also suppress and out-compete mid-storey and canopy trees (Department of the Environment, 2011), affecting the structure and function of land-based and aquatic ecosystems, and impacting negatively on native fauna and flora. Nineteen of 20 studies on weed impact in Australia reviewed by Adair and Groves (1998) demonstrated a decline in either species richness, canopy cover or frequency of native species. One of the reviewed studies (Hester & Hobbs. 1992) found weed presence reduced percent cover of natives and reduced seed production in shrublands and woodlands, with removal of weeds resulting in a 3-fold increase in native cover.

Weeds can also increase the biomass of ecosystems leading to more intense bushfires, changing the composition and structure of native vegetation (Invasive Plants and Animal Committee, 2016).

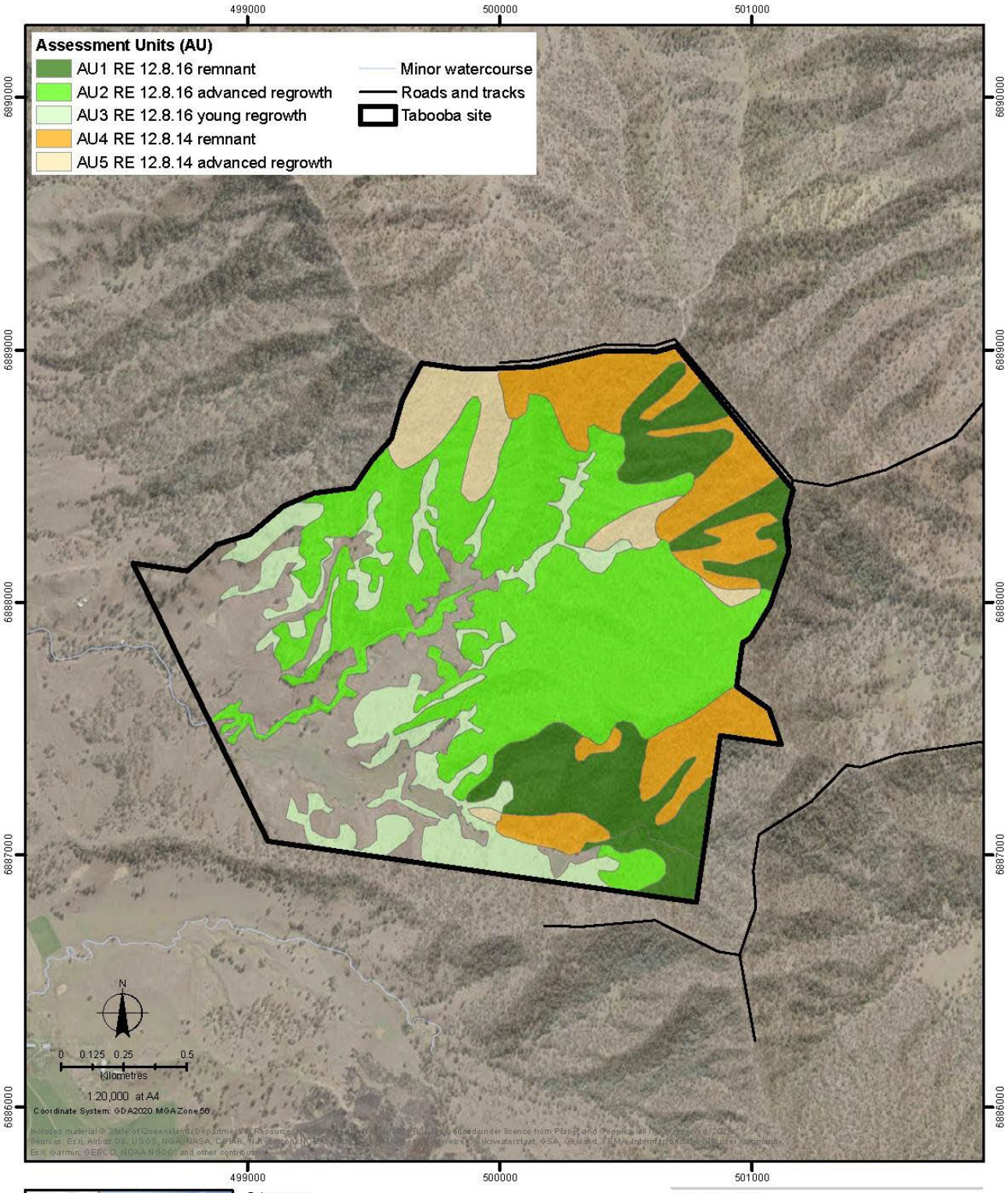
Both properties are subject to invasion by exotic grasses. At Greenridge South African pigeon grass (*Setaria sphacelata*) is a dominant species of open spaces. The species is regarded as an environmental weed in Queensland, New South Wales and Western Australia. It can form dense stands preventing natural plant regeneration and can transform infested areas into open badlands, with potential to invade wetland areas, reducing access for endangered birds (Brisbane City Council, 2024).

Lantana is present on both properties. This is a weed of national significance and was the number one ranked invasive weed in South East Queensland (Batianoff and Butler, 2002). Lantana forms dense thickets that can smother and destroy native vegetation and impede animal movement. Its presence can also create hotter bushfires, altering native vegetation communities (Department of Agriculture and Fisheries, 2023).

Control and removal of lantana and invasive introduced grasses will result in long term positive ecosystem change – by increasing species richness, abundance and recruitment (for lantana, see Gooden et al.,2009) and significantly reducing the risk of intense wildfire. Under these conditions there is high (85%) confidence that the quality of existing ecosystems will be raised to benchmark levels. An additional benefit of the intended weed management is the reestablishment of habitat connectivity for flora and fauna that are impeded by invasive species (Godfree et al. 2017).

The OAG outputs are provided in *Appendix N*.

Figure 9: Tabooba – Koala and grey-headed flying-fox offset area



Data sources:
Vegetation_management_watercourse_and_drainage_feature_map_100k
Published 08/09/2021
Baseline roads and tracks - Queensland
Published 31/03/2022
State of Queensland (Department of Resources) 2022

Drawn By: KM Reviewed by: PJ Date: 30/09/2022

Figure:	10.3
Title:	Tabooba offsets for Koala and Grey-headed Flying-fox
Project:	Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646
Client:	Queensland Department of Transport and Main Roads

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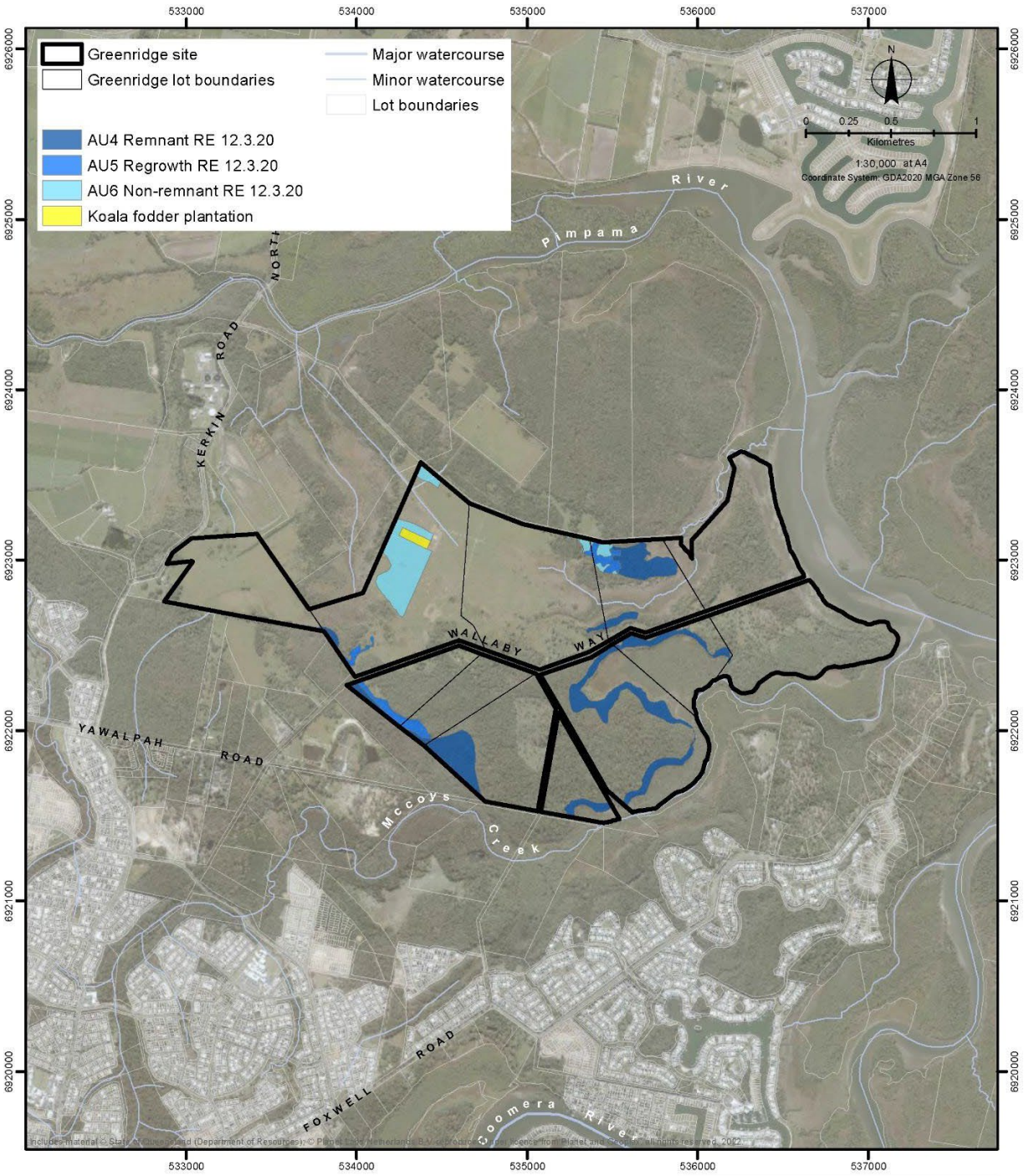
Figure 10: Greenridge – Koala and grey-headed flying-fox offset area



Data sources:
Cadastral data - Queensland - by area of interest, Published 30/05/2022
Vegetation management watercourse and drainage feature map (1:25000) – South East Queensland v5.0, Published 08/09/2021
Baseline roads and tracks - Queensland, Published 31/03/2022
State of Queensland (Department of Resources)

Figure:	**10.2**
Title:	**Greenridge offsets for Koala and Grey-headed Flying-fox**
Project:	**Coomera Connector Stage 1 Offset Strategy – EPBC 2020/8646**
Client:	**Queensland Department of Transport and Main Roads**

Drawn By: KM **Reviewed by: PJ** **Date: 6/02/2024**

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Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-030-0022-G (CCOffset Greenridge_Koala and GHFF Offset).mxdDate: 6/02/2024 4:19:42 PM

3.5 Grey-headed flying-fox - offset site requirements and attributes

3.5.1 Grey-headed flying fox habitat requirements

The grey-headed flying-fox has historically occupied forests and woodlands in the coastal lowlands, tablelands and slopes of eastern Australia, from Bundaberg in Queensland to Geelong in Victoria, with some isolated camps and rare sightings outside this range. More recently, camps have established in South Australia, the Australian Capital Territory and inland areas of central and southern New South Wales and Victoria and sightings have increased in Tasmania (*National Recovery Plan for the grey-headed flying fox* Pteropus poliocephalus. DAWE, (2021)) (**GHFF Recovery Plan**).

Flying-foxes are thought to have a maximum natural longevity of 15-20 years. This, combined with slow sexual maturation and a low reproductive rate, is indicative of a species with a low natural mortality rate. Since European settlement, flying-foxes have faced a greatly increased mortality due to habitat loss, persecution and culling. Due to their low reproductive rate, GHFF also have a low population growth rate, even under optimal conditions. This, combined with increased mortality, means the species has limited capacity for recovery from frequent or persistent threats.

The species feeds on over 100 species of flowering trees and fleshy-fruited trees and lianas. In doing so they interact with numerous plant communities and assist seed and pollen dispersal of its food plants that occur within these communities.

Habitat critical to the survival of the grey-headed flying-fox may also be vegetation communities which:

- contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May)
- contain native species used for foraging and occur within 20 km of a nationally important camp as identified on DCEEW's interactive flying-fox web viewer, or
- contain native and or exotic species used for roosting at the site of a nationally important camp.

Key threats to the species are detailed in *Table 5* in *Section 2.2* of this document. In summary, the principal threats to the species are:

- Habitat loss through land use activities that involve clearing
- Disturbance to camps
- Heat stress, which is expected to increase under climate change
- Entanglement in netting and barbed wire fencing
- Bushfires and inappropriate fire regimes.

The management actions for the GHFF offset areas have been developed to specifically deal with these threats and are detailed in *Section 5*.

3.5.2 Field survey methodology for GHFF offset areas

Tabooba – flora surveys

To assess the suitability of Tabooba for GHFF offsets, habitat assessment and BioCondition surveys were undertaken in May 2022 to compare with the habitat quality identified in the

proposed action corridor. This applied the methods of the *Guide to Determining Terrestrial Habitat Quality – Version 1.3* (Queensland Government 2020) in line with the habitat assessments undertaken in the proposed action corridor for GHFF (Planit 2021b), as well as in line with Eyre et al. (2015); and Eyre, et al. (2011) using the most recent Queensland Herbarium BioCondition benchmarks.

For GHFF, suitable habitat for both properties was considered to be:

- REs with >50% dominant or subdominant vegetation species that are listed in *Ranking the feeding habitats of GHFF for conservation management* (Eby and Law, 2008) as significant flowering or fruiting species; or
- REs with >50% dominant or subdominant vegetation species that are listed in the GHFF Recovery Plan as important winter and spring food trees.

The site vegetation mapping was ground-truthed, compared to satellite imagery and then adjusted accordingly. Due to the different ages of regrowth on the property, regrowth vegetation was divided into the following categories:

- Advanced regrowth: areas supporting a continuous canopy in aerial imagery that was indistinguishable from areas mapped as remnant; and
- Young regrowth: areas supporting a broken canopy with scattered taller trees, but generally dominated by scattered smaller trees as evident in satellite imagery.

Tabooba – fauna surveys

Additional assessment was undertaken for GHFF, and the results have been applied in accordance with *How to use the offsets assessment guide* (DSEWPaC, 2012), taking into account site condition, site context and species stocking rate to contribute to the calculation of habitat quality using the EPBC Act Offsets assessment guide.

No surveys targeting GHFF were conducted at Tabooba as there were no flowering events at the time of surveys. However, the property is dominated by preferred forage species of GHFF, including the winter-flowering *Eucalyptus tereticornis* and *E. crebra*, which are critical resources for the species (GHFF Recovery Plan)

Greenridge – flora surveys

Utilising the same approach as had been used at Tabooba, the site vegetation mapping for Greenridge was ground-truthed, compared to satellite imagery and then adjusted accordingly. Greenridge was then mapped into like AUs, differentiated based on RE type; and vegetation condition (remnant, advanced regrowth, young regrowth or cleared). Standard BioCondition surveys record canopy cover by measuring the vertical projection of canopy intercepting a 100m transect line (Eyre et al. 2015).

Greenridge – fauna surveys

No flying-fox camps were recorded on site, and none have been known from Greenridge previously. GHFF surveys were not undertaken on Greenridge as the REs present are known to be of high value to the species. Greenridge is within 20km of 20 flying-fox camps used by GHFF.

3.5.3 Field survey results for GHFF offset areas

Tabooba

The AUs for vegetation on Tabooba are detailed in *Section 3.4.3* above. The offset area for GHFF is the same area and size as the koala offset area.

Both REs present on Tabooba rank as high-moderate value foraging habitat for GHFF. The GHFF Recovery Plan describes vegetation communities containing (amongst other species) *Eucalyptus crebra*, *E. tereticornis* and *E. melliodora* as important resources for GHFF on coastal lowlands of Southern Queensland as they flower reliably over the winter and spring period. While the property is not located within the coastal lowlands of southern Queensland, Eby and Law (2008) state that productive areas for winter flowering are concentrated in South East Queensland and northern New South Wales where flowering occurs in small remnants in coastal floodplains, coastal dunes and inland slopes, and during spring the extent of productive habitat increases in northern regions, expanding from the coastal lowlands into the coastal ranges and valleys.

The presence of critical forage species and distance to a nationally important flying-fox camp (within 20km) indicates Tabooba supports habitat critical to the survival of GHFF. Protection of existing habitats from clearing, restoration of cleared habitats, weed management to improve canopy recruitment in remnant and advanced regrowth, and improved fire management to reduce the risk of wildfire would ensure available habitat within the property is increased and habitat condition is improved.

The full set of raw BioCondition survey data for Tabooba is provided in *Appendix H*. The HQS tables for each AU within the GHFF offset areas are provided in *Appendix L*.

Greenridge

The AUs for vegetation on Greenridge are detailed in *Section 3.4.3* above. The offset area for GHFF is the same area and size as the koala offset area. A portion of the offset for coastal swamp oak TEC at Greenridge is also high-quality habitat for GHFF.

Greenridge is within 20km of 20 flying-fox camps used by GHFF and the species has been recorded from Greenridge previously, foraging on *Melaleuca quinquenervia* and *Eucalyptus tereticornis* (ddwfauna 2006). During koala surveys in 2022, the EVE koala survey team noted heavy flying-fox use of flowering eucalypts on site.[13] GHFF is expected to forage on site regularly during *Eucalyptus* and *Melaleuca* flowering events.

The full set of raw BioCondition survey data for Greenridge is provided in *Appendix I*. The HQS tables for each AU within the GHFF offset areas are provided in *Appendix L*.

3.5.4 Ecological benefits of the proposed GHFF offsets

Tabooba

As discussed in *Section 3.1.1*, the offset will add to and strengthen the linkages to biodiversity corridors in the area. Additionally, restoration of the vegetation communities to benchmark condition for each RE over a 20-year period will improve the presence and abundance of foraging resources for the GHFF in an area that is within the known distribution and range of the species.

[13] Pers comms, D. de Villiers, cited in BAAM 2022.

The offset will also provide a strengthened level of connectivity to the eastern side of the property where it adjoins habitat classed as 'core habitat" by the Scenic Rim Regional Council. The improved connectivity offered by placing the offsets on Tabooba is discussed further in *Section 3.1.1.*

Greenridge

As discussed in *Section 3.3.4*, the most significant impacts on ecosystem health at Greenridge are the result of feral pig damage and weed invasion, along with maintenance of cleared and weed-infested paddocks adjacent to remnant and regrowth vegetation. The current level of feral pig activity would not be managed without the offset, which will be detrimental to the survival of canopy species that provide foraging resources for the GHFF.

As discussed in Section 3.3.4, the location of the offset areas in relation to nearby areas of remnant vegetation (including the Pimpama Conservation Park and the Pimpama River Conservation Area) is of benefit to the likelihood of success of the offset. The offset property itself will form a large part of a buffer area between the highly developed residential areas to the south and these conservation areas.

The AUs comprising the GHFF offset areas on both properties are shown in

Table 8. These offset areas are the same areas as the koala offsets and are shown in *Figure 9*.and *Figure 10* above.

Table 8: Grey-headed flying-fox habitat at the offset sites

Property	RE	Assessment unit	Type of vegetation	Area of offset (ha)
Tabooba	12.8.16	AU1	Remnant	49.84
		AU2	Advanced regrowth	145.02
		AU3	Young regrowth	48.10
Tabooba	12.8.14	AU4	Remnant	50.62
		AU5	Advanced regrowth	19.80
Greenridge	12.3.20	AU4	Remnant	28.22
		AU5	Regrowth	4.74
		AU6	Non-remnant	12.48
			Total:	**358.82**

3.5.5 OAG inputs for GHFF offsets

Inputs for DCCEEW's OAG were derived from the survey results described above.

The risk of loss was derived from Appendix One of the document titled *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act.*[14]

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[14] Centre of Biodiversity and Conservation Science, School of Earth and Environmental Science, The University of Queensland, Brisbane. (2017) https://www.nespthreatenedspecies.edu.au/media/zpyajjq1/5-1-guidance-for-deriving-risk-of-loss-report_2017_low-res.pdf

communities, with 85% confidence that the goals for offset area habitat quality will be achieved. Periods of 10 years for remnant and 20 years for regrowth and non-remnant communities are required to realise the results of management actions that will improve habitat quality – of these actions, removal of invasive weeds and implementation of controlled burning to prevent damaging wildfire, encourage EDL recruitment and improve ground cover quality are predicted to raise the quality of the remnant and advanced regrowth ecosystems close to benchmark levels.

At present, the quality of habitats at the Greenridge and Tabooba properties are impacted by weeds. Of the 36 introduced plants recorded from within the habitat quality survey plots at the Greenridge property, 2 are weeds of national significance (*Lantana camara* and *Asparagus aethiopicus*) and 19 were identified by Batianoff and Butler (2002) as among the 200 most invasive naturalised plants in South East Queensland, selected from 1060 naturalised taxa. Within the survey plots at Greenridge there was an average of 29.25% non-native cover. Of the 43 introduced plants recorded from within the habitat quality survey plots at the Tabooba property, one is a weed of national significance (*Lantana camara*) and 17 were identified by Batianoff and Butler (2002) as among the 200 most invasive naturalised plants in South East Queensland. Within the survey plots at Tabooba there was an average of 20.5% non-native cover.

Nationally exotic species account for about 15% of flora (Department of Agriculture, Fisheries and Forestry, 2024). Weeds are known to compete with native species for space, light, water and nutrients, and also suppress and out-compete mid-storey and canopy trees (Department of the Environment, 2011), affecting the structure and function of land-based and aquatic ecosystems, and impacting negatively on native fauna and flora. Nineteen of 20 studies on weed impact in Australia reviewed by Adair and Groves (1998) demonstrated a decline in either species richness, canopy cover or frequency of native species. One of the reviewed studies (Hester & Hobbs. 1992) found weed presence reduced percent cover of natives and reduced seed production in shrublands and woodlands, with removal of weeds resulting in a 3-fold increase in native cover.

Weeds can also increase the biomass of ecosystems leading to more intense bushfires, changing the composition and structure of native vegetation (Invasive Plants and Animal Committee, 2016).

Both properties are subject to invasion by exotic grasses. At Greenridge South African pigeon grass (*Setaria sphacelata*) is a dominant species of open spaces. The species is regarded as an environmental weed in Queensland, New South Wales and Western Australia. It can form dense stands preventing natural plant regeneration and can transform infested areas into open badlands, with potential to invade wetland areas, reducing access for endangered birds (Brisbane City Council, 2024).

Lantana is present on both properties. This is a weed of national significance and was the number one ranked invasive weed in South East Queensland (Batianoff and Butler, 2002). Lantana forms dense thickets that can smother and destroy native vegetation and impede animal movement. Its presence can also create hotter bushfires, altering native vegetation communities (Department of Agriculture and Fisheries, 2023).

Control and removal of lantana and invasive introduced grasses will result in long term positive ecosystem change – by increasing species richness, abundance and recruitment (for lantana, see Gooden et al.,2009) and significantly reducing the risk of intense wildfire. Under these conditions there is high (85%) confidence that the quality of existing ecosystems will be raised to benchmark levels. An additional benefit of the intended weed management is the reestablishment of habitat connectivity for flora and fauna that are impeded by invasive species (Godfree et al. 2017).

The OAG outputs are provided in *Appendix O*.

4 Analysis of risks to achieving management objectives and offset completion criteria

Potential risks to achieving the management objectives and outcomes have been considered in this plan, as shown in *Table 10* for the Tabooba property and in *Table 11* for Greenridge. These risks include those that have been derived from an assessment of the threats to each of the impacted matters that are discussed in the relevant DCEEW listing advice, conservation advice, threat abatement plans and recovery plans, as detailed in *Table 5*. They have been assessed against the risk matrix (*Table 9*) supplied by DCCEEW. The risk matrix has been used to assess the risk that the plan's objectives will not be met and identify the sources of those risks and strategies for managing them.

The risk assessment:

a) identified threats that will, may, or are likely to impact the attainment of the completion criteria
b) assesses the likelihood and consequences of those threats, and characterises residual risk levels, taking into consideration the mitigation of the risk by implementing the management actions
c) identifies the level of uncertainty in mitigating the risk with the management actions and trigger criteria and corrective actions until the risk is reduced to an acceptable level.

The management actions and corrective actions are described in full detail in *Section 5*.

Table 9: Risk matrix

RISK MATRIX	
Qualitative measure of likelihood (how likely is it that this event/circumstances will occur after management activities are implemented)	
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
Qualitative measure of consequences (what will be the consequence/result if the issue does occur)	
Minor	Minor incident of environmental damage that can be reversed (*e.g. short-term delays to achieving plan objectives, implementing low-cost, well-characterised corrective actions*)
Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts (*e.g. short-term delays to achieving plan objectives, implementing well-characterised, high-cost/effort corrective actions*)
High	Substantial instances of environmental damage that could be reversed with intensive efforts (*e.g. medium-long term delays to achieving objectives, implementing uncertain, high-cost/effort corrective actions*)

Major	Major loss of environmental amenity and real danger of continuing (*e.g. plan objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies*)
Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage (*e.g. plan objectives are unable to be achieved, with no evidenced mitigation strategies*)

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

Table 10: Risk assessment for the terrestrial offset sites at Tabooba

Note: The risk ranking codes relate to the risk matrix as follows: L = Likelihood C = Consequence R = Risk

Risk	Threats	Initial risk ranking			Management measures	Management measures/actions	Residual risk ranking		
		L	C	R			L	C	R
Force majeure events									
Drought	The threat posed by an extreme weather event, in the form of drought, causes habitat degradation and mortality of vegetation within the restoration area during the establishment period	Likely	High	High	Offset area management	Exclude livestock from the offset area during periods of declared drought. Maintain firebreaks for wildfire response readiness. Commence any necessary woodland rehabilitation/restoration actions in locations where there is greatest spring-fed water availability (e.g. creek flood zones and lower slopes), building outwards from these areas to take advantage of improved microclimatic conditions (reduced solar radiation and wind, increased humidity) from increased tree cover.	Likely	Moderate	Medium
Cyclones/ severe tropical lows/ flooding	The most significant threat from tropical cyclones or tropical lows is flooding and high winds causing habitat degradation.	Likely	Moderate	Medium	Offset area management	Understand on-site flood areas ensure habitat restoration is suited to these areas. Improve all-weather access if flooding could potentially restrict management access. Provide drainage (culverts) on access tracks where they are intersected by flows from spring water.	Likely	Minor	Low
Severe fire event	Catastrophic bushfire causes habitat degradation and loss of habitat for Koala and GHFF	Likely	Critical	Severe	Fire management	Fire breaks re-formed every 2 years and slashed every 2 months in winter and every month in summer. Develop a wildfire response procedure. Undertake planned burns in remnant and regrowth Koala and GHFF habitat in accordance with relevant RE fire management guidelines.	Possible	Major	High
Degradation of koala and grey-headed flying-fox habitat									
Degradation of Koala and GHFF habitat	The degradation of Koala and GHFF habitat due to the lack of environmental management of the offset area including appropriate invasive plant control, pest animal control, fire management, and/or infrastructure maintenance.	Possible	High	Medium	Offset area management	Implementation of the management invasive plant control, pest animal control and fire management actions to best practice standards and adaptive management framework as outlined in this OAMP (*Table 12*)	Unlikely	Minor	Low
Habitat or vegetation loss through land clearing									
Unplanned clearing and illegal access causing habitat degradation (i.e., Illegal timber harvesting/ collection, Illegal access by the public causes habitat degradation and increases fire risk)	The offset site occurs near semi-rural and urban areas. It is possible for unplanned / illegal clearing for agriculture activities but considered improbable as the offset site will be mapped as Category A on the property map of assessable vegetation (**PMAV**). Clearing may however occur by vehicles traversing the area off designated roads/tracks and/or illegal camping.	Unlikely	Major	High	Offset area management Site access control	Clearing of native vegetation in the offset area is only permitted under the OAMP where it would result in a benefit for Koala and GHFF habitat. Within 12 months of the approval (17 March 2024), register a declared area over the offset site, ensuring it is shown as Category A vegetation on the PMAV. All monitoring (rapid and detailed) will report on any evidence of clearing.	Rare	Major	Medium
Degradation of habitat by overgrazing									
Unauthorised or inappropriate grazing in offset area	High density grazing over an extended period destroys shrubs and native grass cover and slows the regeneration of habitat.	Possible	High	Medium	Grazing management	Fences are in working order and allow for exclusion of livestock from the offset area. Livestock to be excluded from the Koala and GHFF offset areas during periods of drought and/or if dry matter yield (**DMY**) is <1400kg/ha (January) (see *Appendix D*). Livestock to be managed in the offsets area in accordance with management measures as outlined in this OAMP (*Table 12*)	Unlikely	Minor	Low

Risk	Threats	Initial risk ranking L	C	R	Management measures	Management measures/actions	Residual risk ranking L	C	R
Invasive plants: introduction, establishment and spread of non-native weeds including restricted invasive plants listed under the* Biosecurity Act 2014 *(Qld)									
New infestations of invasive and environmental weed species in the offset area.	If a weed infestation is unchecked, it may cause a significant deterioration in the offset site.	Possible	Major	High	Invasive plants and environmental weeds management listed under the *Biosecurity Act 2014* (Qld)	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. If a new weed infestation is identified, consult with local NRM Catchment Group, Healthy Land and Water, Council and Queensland Department of Agriculture and Fisheries to determine the invasiveness of the weed and tested/recommended control measures. Control the spread of new infestation/s. Treat new infestation/s promptly to reduce the extent and spread of the infestation.	Unlikely	Minor	Low
Expansion of existing infestations of declared weed species in the offset area	The extent of existing infestations of invasive plants and environmental weed species expands, or the species become more abundant within the area.	Highly likely	High	High	Invasive plants and environmental weed management listed under the *Biosecurity Act 2014* (Qld)	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. Map invasive plant and environmental weeds as part of baseline and ongoing environmental monitoring. Chemical and/or mechanical control of all invasive plants and environmental weeds in accordance with the control measures outlined in the Biosecurity Queensland Fact Sheets or other sources of information.	Unlikely	Minor	Low
Pest/feral animals in the offset area									
Increased population of wild and feral animals in the offset area.	Feral cat, feral pig and wild dog populations are extensive and highly transient, and therefore the scale of impact is potentially large (anecdotal data suggests up to seven wild dogs on property). Major damage to the environment/habitat occurs when large numbers of animals congregate in the area. Feral deer have not been recorded on the offset site but are known in the area and could become established, causing environmental impacts (especially to regrowth).	Highly likely	High	High	Pest animal management Feral pig management Feral deer incursion	The land manager will cooperate with and participate in any and all best practice pest control programs on adjoining properties. Pest animal control program to be implemented according to industry best practice standards via appropriately qualified person/s. Controlling feral pigs, and wild dogs by implementing a coordinated multiple pronged management program . Additionally, if the land manager, during quarterly inspections of the offset area notes an incursion of feral deer, feral pig or wild dog activity, an additional coordinated multiple pronged management program is to be instigated until the increased activity has ceased and/or the deer, feral pigs and wild dogs are removed.	Possible	Minor	Low
Fire: the impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality									
Unplanned or uncontrolled fire in offset area.	The impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality.	Likely	Moderate	Medium	Fire management	Fire breaks re-formed every 2 years and slashed every 2 months in winter and every month in summer. Wildfire response procedure developed.	Possible	Minor	Low
Inappropriate fire regimes	The impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality.	Possible	High	Medium	Fire management	Undertake planned burns in remnant and regrowth Koala and GHFF habitat in accordance with relevant RE fire management guidelines (*Table 14* and *Table 14*) and/or weed control works. Livestock will be used to reduce fuel loads, when required.	Unlikely	Minor	Low
Offset fails to achieve the interim performance targets and/or completion criteria within the anticipated 5-, 10-, 15- and 20-year timeframes, respectively									

Risk	Threats	Initial risk ranking L	C	R	Management measures	Management measures/actions	Residual risk ranking L	C	R
Offset fails to achieve the interim performance targets and/or completion criteria within the anticipated 5, 10-, 15- and 20-year timeframes, respectively.	Failure to achieve and maintain offset completion criteria	Possible	High	Medium	Offset area management	Implement the management actions of this OAMP. Monitor and report on attainment of interim environmental performance targets and completion criteria.	Unlikely	High	Medium

Table 11: Risk assessment for the terrestrial offset sites at Greenridge

Note: The risk ranking codes relate to the risk matrix as follows: L = Likelihood C = Consequence R = Risk

Risk	Threats	Initial risk ranking L	C	R	Management measures	Management measures/actions	Residual risk ranking L	C	R
Force majeure events									
Drought	The threat posed by extreme weather events, in the form of drought, causes habitat degradation and mortality of vegetation within the restoration area during the establishment period.	Likely	High	High	Offset area management	Consider seasonal forecasts and areas of water availability (e.g. in/adjacent to the freshwater wetlands) prior to commencing any necessary replanting activities. Monitor onsite water availability to ensure an adequate supply is available for use if required. Monitor restoration plantings for mortality. Undertake replanting as required.	Likely	Moderate	Medium
Cyclones/severe tropical lows/flooding	The most significant threat from tropical cyclones or tropical lows is flooding and high winds causing habitat degradation.	Likely	Moderate	Medium	Offset area management	Understand on-site flood areas ensure habitat restoration is suited to these areas. Improve all-weather access if flooding could potentially restrict management access. Monitor restoration plantings for mortality. Undertake replanting as required.	Likely	Minor	Low
Severe fire event	Catastrophic bushfire causes habitat degradation and loss of habitat for Coastal Swamp Oak TEC, Koala and GHFF.	Likely	Critical	Severe	Fire management	Fire breaks reformed every 2 years and slashed every 2 months in winter and every 2 weeks in summer. Undertake planned burns in remnant and regrowth Coastal Swamp Oak TEC, Koala and GHFF habitat in accordance with relevant RE fire management guidelines.	Possible	Major	High
Degradation of habitat swamp oak TEC									
Degradation of Coastal Swamp Oak TEC	Failure to rehabilitate 21.84 ha (AU3) of Coastal Swamp Oak TEC.	Possible	High	Medium	Coastal Swamp Oak TEC rehabilitation and enhancement plan	Implementation of the Coastal Swamp Oak TEC rehabilitation and enhancement plan (refer to *Appendix C*).	Unlikely	Minor	Low
Degradation of Coastal Swamp Oak TEC	The degradation of Coastal Swamp Oak TEC due to the lack of environmental management of the offsets area including appropriate invasive plant control, pest animal control, fire management, and/or infrastructure maintenance.	Possible	High	Medium	Offset area management	Implementation of the management invasive plant control, pest animal control (especially feral pigs) and fire management actions and adaptive management framework as outlined in this OAMP *(Table 13).*	Unlikely	Minor	Low
Degradation of habitat for koala and grey-headed flying-fox									

Risk	Threats	Initial risk ranking			Management measures	Management measures/actions	Residual risk ranking		
		L	C	R			L	C	R
Degradation of Koala and GHFF habitat	The degradation of Koala and GHFF habitat due to the lack of environmental management of the offsets area including appropriate invasive plant control, pest animal control, fire management, and/or infrastructure maintenance.	Possible	High	Medium	Offset area management	Implementation of the management invasive plant control, pest animal control and fire management actions and adaptive management framework as outlined in this OAMP (*Table 13* and *Table 15*).	Unlikely	Minor	Low
Habitat or vegetation loss through land clearing									
Unplanned clearing and illegal access causing habitat degradation (e.g., illegal timber harvesting/ collection, illegal access by the public causes habitat degradation and increases fire risk)	The offset site occurs near semi-rural and urban areas. It is possible for unplanned/illegal clearing for agriculture activities but considered improbable as the offset site will be mapped as Category A on the property map of assessable vegetation (**PMAV**). Clearing may however occur by vehicles traversing the area off designated roads/tracks and/or illegal camping.	Unlikely	Major	High	Offset area management Site access control	Clearing of native vegetation in the offset area is only permitted under the OAMP where it would result in a benefit for Coastal Swamp Oak TEC, Koala and GHFF. Complete the installation of signage at all vehicle accesses identifying the areas as an environmental offset, within six months of the approval of this OAMP. Suitable fencing and/or signage of property to prevent access (where possible) from unauthorised personnel, within twelve months of the approval of this OAMP. Within 12 months of the approval date (17 March 2024), register a declared area over the offset site, ensuring it is shown as Category A vegetation on the PMAV. All monitoring (rapid and detailed) will report on any evidence of clearing.	Rare	Major	Medium
Degradation of habitat by overgrazing									
Unauthorised or inappropriate grazing in offset area	High density grazing over an extended period destroys shrubs and native grass cover and slows the regeneration of habitat.	Possible	High	Medium	Grazing management	Domestic grazing livestock to be excluded from the offset areas. Fences are in working order and allow for exclusion of domestic livestock from the property. Signage will be installed on all major access gates to ensure the environmental offset area is well signposted.	Unlikely	Minor	Low
Invasive plants: introduction, establishment and spread of non-native weeds including restricted invasive plants listed under the* Biosecurity Act 2014 *(Qld)									
New infestations of invasive and environmental weed species in the offset area.	The offset site is in close proximity to urban areas and the risk of new invasive plants and/or environmental weeds is considered high. If a weed infestation is unchecked, it may cause a significant deterioration in the offset site.	Possible	Major	High	Invasive plants and environmental weeds management listed under the *Biosecurity Act 2014* (Qld)	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. If a new weed infestation is identified, consult with local NRM Catchment Group, Healthy Land and Water, Council and Queensland Department of Agriculture and Fisheries to determine the invasiveness of the weed and tested/ recommended control measures Control the spread of new infestation/s. Treat new infestation/s promptly to reduce the extent and spread of the infestation.	Unlikely	Minor	Low
Expansion of existing infestations of declared weed species in the offset area	The extent of existing infestations of invasive plants and environmental weed species expands, or the species become more abundant within the area.	Highly likely	High	High	Invasive plants and environmental weed management listed under the *Biosecurity Act 2014* (Qld)	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. Map invasive plant and environmental weeds as part of baseline and ongoing environmental monitoring. Chemical and/or mechanical control of all invasive plants and environmental weeds in accordance with the control measures outlined in the Biosecurity Queensland Fact Sheets or other sources of information.	Unlikely	Minor	Low
Pest/feral animals in the offset area									

Risk	Threats	Initial risk ranking L	Initial risk ranking C	Initial risk ranking R	Management measures	Management measures/actions	Residual risk ranking L	Residual risk ranking C	Residual risk ranking R
Increased population of feral animals in the offset area.	Feral cat, feral pig and wild dog populations are extensive and highly transient, and therefore the scale of impact is potentially large. Major damage to the environment/habitat occurs when large numbers of animals congregate in the area. Feral deer have not been recorded on the offset but are known in the area and could become established, causing environmental impacts (especially to regrowth)	Highly likely	High	High	Pest animal management Feral pig management Feral deer incursion response	Pest animal control program to be implemented vis appropriately qualified person/s. Control feral pigs, wild dogs and European foxes via a coordinated multiple pronged management program. Additionally, if the land manager, during quarterly inspections of the offset area notes an incursion of feral deer, feral pig or wild dog activity, an additional coordinated multiple pronged management program is to be instigated until the increased activity has ceased and/or the deer, feral pigs and wild dogs are removed	Possible	Minor	Low
Increased population of fire ants	Potential further spreading of fire ants into the offset areas.	Highly likely	High	High	Fire ant control program	TMR will coordinate this program with the Department of Agriculture and Fisheries who have carriage of fire ant control programs.[15]	Possible	Minor	Low
Fire: the impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality									
Unplanned or uncontrolled fire in offset area.	The impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality	Likely	Moderate	Medium	Fire management	Fire breaks reformed every 2 years and slashed every 2 months in winter and every 2 weeks in summer. Wildfire response procedure developed.	Possible	Minor	Low
Inappropriate fire regimes	The impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality	Possible	High	Medium	Fire management	Undertake low-intensity planned burns in remnant and regrowth Coastal Swamp Oak TEC, Koala and GHFF habitats in accordance with relevant RE fire management guidelines (*Table 15* and *Table 15*) and/or weed control works and/or Coastal Swamp Oak TEC rehabilitation and enhancement plan.	Unlikely	Minor	Low
Offset fails to achieve the interim performance targets and/or completion criteria within the anticipated timeframes									
Offset fails to achieve the interim performance targets and/or completion criteria within the anticipated 5, 10-, 15- and 20-year timeframes, respectively	Failure to achieve and maintain offset completion criteria	Possible	High	Medium	Offset area management	Implement the management actions of this OAMP. Monitor and report on attainment of interim environmental performance targets and completion criteria.	Unlikely	High	Medium

[15] See https://www.daf.qld.gov.au/business-priorities/biosecurity/invasive-plants-animals/ants/fire-ants

5 Offset management measures

The offset area management measures include, but are not limited to, management actions required on the offset site to abate those threats identified to the Coastal Swamp Oak TEC, Koala and GHFF. These identified threats to each species align with the relevant listing advice, conservation advice and threat abatement plan and recovery plan for each matter, and have been detailed in *Table 5* and are also summarised in *Section 3.3.1* (coastal swamp oak TEC), *Section 3.4.1* (koala habitat), and *Section 3.5.1* (GHFF habitat). A full assessment of the risks that these threats present is presented in *Section 4.*

The offset area management measures provide for the management, reporting, and the monitoring program (*Table 18*) that will be undertaken for the period of EPBC Act approval. Protection of the offset area will be maintained under the *Vegetation Management Act 1999* (Qld) (**VM Act**) as a Category A area of vegetation (vegetation subject to a restoration order or an offset).

The management actions include:

- Limiting vegetation clearing to only those areas required for maintaining fencing and fire control lines
- Prohibiting alternate land use and activities during the period of the declared area (e.g. timber harvesting, cropping)
- Restricting unauthorised access
- Excluding all domestic livestock from Greenridge
- Limit domestic livestock to specific areas at Tabooba
- Controlling pest animals
- Managing fire
- Controlling invasive plants
- Thinning of thickened areas

The management schedules describe the actions to be undertaken on the offset sites at Tabooba (*Table 12*) and at Greenridge (*Table 13*).

A separate fire management strategy has been developed specifically for each of the two offset properties which implements the recommended fire strategy for the relevant REs in the Tabooba offset areas (*Table 14*) and in the Greenridge offset areas (*Table 15*).

Additionally, a Coastal Swamp Oak TEC rehabilitation and revegetation plan has been developed for AU3 at Greenridge (refer to *Appendix C*). this revegetation plan will be implemented over a 5-year period to reduce the risk of seasonal variations affecting plant establishment.

The risk assessment undertaken for the offset areas identified the impact of pest animals as one of the most significant risks to the success of the offsets, for all of Coastal Swamp Oak TEC, Koala and GHFF. Accordingly, detailed pest animal management strategies have been developed for each property and are detailed further in the sections below.

Regular offset area reports will be prepared by TMR as listed in *Table 18* and *Table 19* (refer to *Section 8*). These will report against each of the management actions shown in *Table 12* and *Table 13.* These management actions enable the offset site to improve to achieve the scores in *Table 16*, thus attaining and maintaining the completion criteria required of the offset. The reports will provide transparency regarding how the site management actions are being implemented,

and where relevant, identify any force majeure events impacting the offset site, and any non-compliance with the management plan.

Reducing the impact of pest animals on Tabooba

Wild dogs and European foxes are present on Tabooba and reducing their impacts on native animals will be critical to improving and sustaining the habitat quality.

Although 1080 baiting is considered to be the most effective and efficient control technique currently available to reduce wild dog and European fox impacts; other secondary control tools may be required if target animals show bait aversion or as indicated as a corrective action measure. These techniques include foot hold trapping and canid pest ejectors (see *Appendix B*).

Although feral pigs and feral deer have not been recorded on the site at this time, these pest animals have formed populations in the area and it is very likely that these pests are either already present at low densities or will be observed on the site over the life of this OAMP. As such, feral pig and feral deer management actions are planned for (and outlined in *Table 12*).

Feral pig control will be carried out upon the detection of feral pig activity and may involve baiting simultaneously at 3 or 4 sites across the property. Adjoining landholders may also be involved. The primary feral pig control technique should be baiting (either 1080 grain or sodium nitrate (Hoggone®) is suitable). Feral pig baiting will be carried out by trained operators in accordance with the product label and or 1080 standards (see above). The relevant SOP must be followed (especially in relation to free feeding requirements) (see *Appendix B*). Feral pig trapping is not as efficient as baiting at removing large proportions of the population; however, may be used as a secondary control tool where baiting is not suitable or permitted. Feral pig trapping will be carried out in accordance with the SOP in *Appendix B*.

Feral deer, both rusa deer (*Cervus timorensis*) and red deer (*Cervus elaphus*), have been recorded throughout the region and are known to be spreading rapidly across South East Queensland (**SEQ**). Even low-density feral deer populations can have severe and lasting impacts on native vegetation (particularly young trees). Any observed feral deer will trigger a rapid response to initiate a ground shooting operation. This program (and actions) will be set out in an approved shooting plan and be in compliance with the relevant SOP in *Appendix B*.

Reducing the impact of pest animals on Greenridge

Feral pigs and European foxes have been recorded on Greenridge. Uncontrolled feral pig populations will have detrimental impacts on the habitat condition of this offset, especially the Coastal Swamp Oak TEC vegetation community. Effective feral pig control on Greenridge will require ongoing best practice control. Feral pig control will aim to reduce populations by at least 70% in the first year with follow-up control activities conducted within the feral pig gestation period (four months).

As Greenridge is close to urban developments, but does have restricted access, pest animal management would be particularly suited to trapping and shooting.

Feral pig trapping can be utilised as part of this plan but should only be attempted where baiting is not allowed or suitable. Feral pig trapping (especially free feeding) will be carried out in accordance with the SOP in *Appendix B*.

Wild dogs, albeit rare and European foxes are present on Greenridge and adjacent properties and reducing their impacts on native animals will be critical to improving and sustaining the health of the offset. Control tools may include shooting and/or foot hold trapping and canid pest ejectors (see *Appendix B*).

Although thought to be absent from the site at this time, feral deer, being rusa deer (*Cervus timorensis*), red deer (*Cervus elaphus*) and fallow deer (*Dama dama*) have been recorded throughout the region and are known to be spreading rapidly across SEQ. Even low-density feral deer populations can have severe and lasting impacts on native vegetation (particularly young trees). Any observed feral deer will trigger a rapid response to initiate a ground shooting operation. This program (and actions) will be set out in an approved shooting plan and be in compliance with the relevant SOP in *Appendix B*.

Table 12: Tabooba offsets - management actions, triggers and corrective actions

The management actions shown in this table are consistent with the risks identified in the listing advice, conservation advice, and threat abatement plans relevant to each matter.

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
Degradation of Koala and GHFF habitat	Koala and GHFF management	Increase the habitat quality scores for remnant and regrowth Koala and GHFF habitat (AU4) based on the results of baseline and subsequent monitoring events to achieve the interim targets and completion criteria targets as listed in *Table 16*.	Implement pest animal control management actions Implement invasive plants and environmental weed control management actions. Undertake livestock grazing in accordance with livestock grazing management actions. Undertake planned burns in remnant and regrowth Koala and GHFF habitat in accordance with relevant RE fire management guidelines (*Table 14*). Undertake strategic ecological thinning in regrowth and remnant areas (e.g., non-eucalypt and non GHFF habitat trees) if recommended by appropriate qualified ecologist.	TMR and associated contractors	Monitoring of offset value habitat quality scores will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the habitat quality scores and completion criteria to determine the progress of the offset area and recorded as part of reporting (see *Section 8*).	Koala and GHFF habitat quality scores, performance targets and completion criteria (*Table 16*) are not on track to being achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger: • Within one month after detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. • Within two months after detection of the trigger, complete a re-evaluation of the suitability of the relevant management measures in the OAMP. The re-evaluation must identify appropriate corrective actions. Step 2: Implementation of corrective action/s The appropriate corrective actions identified under Step 1 will be implemented as soon as practicable, and in any case within six months after detection of the trigger.
Habitat or vegetation loss through land clearing	Maintain the extent of offset value habitat within the offset area	No unapproved and/or intentional clearing of vegetation of Koala and GHFF habitat offset area, except for clearing that is required for fencing, access, firebreaks, ecological restoration and public safety.	Protection of the offset area via a declared area under Section 19E and 19F of the VM Act, as described in *Section 9* to be registered within six months of the approval of this OAMP.	TMR and associated contractors	Advise DCCEEW within 5 business days when the approved declared area over the offset has been registered by the Queensland Department of Resources. Reporting to the Australian Government consistent with any and all EPBC Act approval(s).	Any activities in contravention of the declared area management plan.	Step 1: Investigate cause of trigger (e.g. unauthorised access) • As soon as practicable, and in any case within one month of detection of the trigger, identify appropriate corrective actions. Step 2: Implementation of corrective action/s • As soon as practicable, and in any case within two months of detection of the trigger, the appropriate corrective actions must be implemented. These may include (though are not limited to) additional fencing and/or signage and security for the offset area.
			Construction and maintenance of access tracks, fencing and firebreaks will be undertaken in accordance with the requirements of *Table 10.* If vegetation clearing is required for fencing, access (e.g., weed control), firebreaks or public safety it must be undertaken in accordance with best practice management methods and any applicable legislative requirements. Any clearing and/or ecological thinning in accordance with the advice of an appropriately qualified ecologist.	TMR and associated contractors	Quarterly inspections will monitor and document if any unapproved and/or intentional clearing of vegetation within the offset area Quarterly inspections will monitor and document vegetation clearing that has occurred for fire break, access road or fence line maintenance.	Any unapproved and/or intentional clearing within the offset area	
Degradation of habitat by overgrazing	Grazing management	Livestock to be excluded from the offset area at specific times. When the habitat has become more established	Fences are maintained in a stockproof condition and allow for exclusion of livestock from the offset area. Any new or replacement fencing will be wildlife-friendly including the use of a plain top wire.	Land manager, TMR	Quarterly inspections will monitor and document if presence or evidence of livestock are present in offset area.	Detection and/or evidence of livestock in offset area outside of specified timeframes and/or if DMY is <1,400kg/ha.	Upon being notified or becoming aware of prohibited livestock grazing in the offset area, TMR (or their successors or assigns) is to remove the livestock from the area (if present) and assess the adequacy of fencing within 10 days. The land manager is to undertake fence

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
		and better quality, livestock may be progressively removed from the offset area.	Cattle to be excluded from the Koala and GHFF offset areas during periods of drought and/or if DMY is <1,400kg/ha (see *Appendix D*) Cattle to be introduced in offsets area if DMY is >3,000kg/ha between April – September and the soil is dry. Cattle to be removed from the offsets area at commencement of the wet season >25mm October – March and/or if DMY is <1400kg/ha January.		When the habitat has become more established and better quality, the DMY can be expected to reduce as the canopy and shrub layer recovers. The need to utilise grazing to reduce fuel load (DMY) should reduce over time.		maintenance and repairs to resecure the offset area within 10 days.
Introduction, establishment and spread of non-native weeds including restricted invasive plants listed under the Biosecurity Act 2014 *(Qld)*	Invasive plants and environmental weed management listed under the *Biosecurity Act 2014* (Qld)	Invasive plants and environmental weed cover must not exceed 10% cover of the offset area by Year 20. No new restricted invasive plants listed under the *Biosecurity Act 2014* (Qld) are identified at any monitoring site (based on subsequent monitoring events).	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. Chemical and/or mechanical control of all invasive plants and environmental weeds in accordance with the control measures outlined in the Biosecurity Queensland Fact Sheets or other sources of information. If a new weed infestation is identified, consult with local NRM Catchment Group, Healthy Land and Water, Council and Queensland Department of Agriculture and Fisheries to determine the invasiveness of the weed and tested/ recommended control measures. Control the spread of new infestation/s. Treat new infestation/s promptly to reduce the extent and spread of the infestation.	Land manager, TMR and associated contractors	Map invasive plant and environmental weeds as part of baseline and ongoing habitat quality monitoring. Quarterly inspections will observe and record the presence of weeds and success of previously applied weed control measures. The inspection will include before and after photos of the weed control area.	Pest plants dominate isolated area and or occur in an area greater than 10% of the offset area. An invasive weed species is identified at one or more monitoring sites, or opportunistically during any site inspection or other monitoring.	Step 1: Investigate cause of trigger Step 2: Implementation of corrective action(s) Upon being notified or becoming aware of pest plants dominating isolated areas and or occupying greater than 10% of the offset area, TMR will implement pest control measures within one month. These measures may include, and are not limited to: • foliar spraying • basal bark spraying • stem injection • cut stump • cut and swab • stem scraper • wick applicators • physical removal.
Increased population of feral animals in the offset area.	Pest animal management	Reduction in the abundance of wild dog, feral cat and other feral animals from the first year of management.	Participate fully in, and cooperate with, any and all regional pest control programs, unless those would otherwise contravene a part of this OAMP. Pest animal control program to be implemented to best practice standards via appropriately qualified person/s. Control feral pigs, European foxes and wild dogs via a coordinated multiple pronged management program. Pest control will be undertaken twice within a 3-month period. Additionally, if the land manager, during quarterly inspections of the offset area notes an incursion of feral deer, feral pig or wild dog activity, an additional coordinated multiple pronged management program is to be instigated until the increased activity has ceased and/or the deer, feral pigs and wild dogs are removed.	Land manager, TMR and associated contractors	Monitoring of this management action will be undertaken by an appropriately qualified person appointed by TMR at least four times annually. Quarterly inspections will involve traversing the offset area with streams, low lying areas and vehicle access tracks being noted to record the presence of wallow holes, tracks and visual incidents in the offset area. If detected, these areas will be GPS-recorded and photographed and rechecked at the next quarterly inspection.	Any observed evidence of feral animal presence and/or habitat damage in the offsets area	• Upon being notified or becoming aware of pest animal populations exceeding the threshold, the land manager is to implement all necessary or appropriate control measures needed to reduce pest animal populations to below trigger thresholds. The land manager is to have completed implementation of all necessary or appropriate pest control measures within one month. • The land manager may approach neighbouring landowners to discuss the increased pest animal presence and an integrated control program may be developed. If an integrated control program is considered appropriate, the land manager will make best endeavours to reach agreement with neighbouring landowners to implement such a program. • If impacts from the pest animal populations have not naturally remediated within six months of completion of implementation of the control measures, the land manager is to undertake and complete all works required to remediate those impacts.
Degradation of habitat by feral pigs	Feral pig management	Reduction in observed feral pig abundance from the first year of management. With pigs, the gestation period is 3 months, so if control actions are undertaken 3 months apart, the population can be heavily impacted.				An increase in mean feral pig abundance from first year and subsequent monitoring events.	

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
Fire: the impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality	Fire management	Uncontrolled fire does not occur in the offset area. Planned burns undertaken in remnant and regrowth Koala and GHFF in accordance with relevant RE fire management guidelines (*Table 14*).	Implement fire management in accordance with requirements in this OAMP, including: • Fire breaks reformed every 2 years and slashed as required to enable access and maintain fuel loads below 3,000 tonnes of dry matter yield/ha. • Wildfire response procedure developed • Undertake planned burns in remnant and regrowth Koala and GHFF habitat in accordance with relevant regional ecosystem fire management guidelines (*Table 14*) and/or weed control works. • Planned burns target mosaic burning resulting in patches of unburnt vegetation providing variation in the stages of response from fire and diversity of habitat. A mosaic is achieved with generally 40–80 per cent burnt within the target communities (refer Southeast Queensland Bioregion Planned Burn Guidelines, Qld Government 2013) • Controlled grazing for fuel reduction purposes.	Land manager, TMR and associated contractors	Quarterly inspections will monitor and document if there is evidence of wildfire, prohibited burning or force majeure events. Quarterly inspections will monitor and document if a prescribed low-intensity ecological burn has occurred, and recorded in the Annual report with the written advice from an ecologist or other suitably qualified person (e.g. Fire Warden)	The occurrence of deliberately lit fires. Offset area habitat degradation as a result of a lack of or inappropriate fire regimes as determined through monitoring.	Step 1: Investigate cause of trigger • Within one month of detection of the trigger, complete an investigation into the reasons why the fire management measures have resulted in a decrease in habitat quality scores. That investigation must review adherence to the fire management measures and must identify appropriate corrective actions. Step 2: Implementation of corrective action/s • Corrective action: upon being notified or becoming aware of a prohibited fire in the offset area, the landholder is to reassess and implement new access protocols for any lessees etc., signage and general access within one fortnight. • Corrective action: subsequent to any occurrence of fire in the offset area, the land manager suitable qualified person appointed by the Landholder will: 1. inspect and repair, and widen if necessary, all firebreaks; and 2. reassess fuel load reduction practices; and 3. exclude grazing until the DMY is >3,000 kg/ha.
Offset fails to achieve the performance targets and completion criteria within the 10- or 20-year timeframe.	Achieve the performance targets and completion scores in *Section 6* at Year 10 or Year 20.	The performance targets and completion criteria are achieved by Year 10 or Year 20.	All management actions outlined in in this OAMP will be implemented to ensure that the performance targets and completion criteria are achieved.	TMR and associated contractors	Monitoring of the offset area will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the performance targets and completion criteria to determine the progress of the offset area and recorded as part of reporting.	The performance targets and completion criteria are not achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger • Within one month of detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. This investigation must re-evaluate the suitability of the relevant management measures in the OAMP and must identify appropriate corrective actions. Step 2: Implementation of corrective action/s As soon as practicable, and in any case within eight months of detection of the trigger, complete implementation of the corrective actions identified under Step 1. These may include (though are not limited to): • Increasing the frequency and intensity of pest animal and weed control measures or revising the type of measures to be implemented. • Modifying the fire management measures, to better support enhancement of offset values. If the investigation under Step 1 recommends changes to the management regime, then as soon as possible, and in any case within six months of detection of the trigger, implement a revised OAMP incorporating those recommended changes.

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
Site access	Unauthorised persons, vehicles, and/or stock are prevented from accessing the site, and authorised stock are prevented from incurring during exclusion times	Public access to the offset area is prohibited. Access is restricted to those authorised persons required to undertake actions described in this management plan, including the landholder, and approval holder staff and their contractors and assigns. The offset area is not to be utilised for any purpose including recreational activities, or any other activities that deter from achieving the outcomes of this plan. No evidence of unauthorised persons, vehicles, and/or stock is detected on site at any point. Fences and signage are erected at all necessary points and kept in good repair throughout the life of the EPBC Act approval.	Fences will be maintained to prevent unauthorised access and to control stock presence. Signs will be erected at all entrances and potential access points to the site stating that access to the site is forbidden. Security cameras are to be installed at the 2 access points to the property. All signs and any new planned fences will be erected within six months of the approval of this OAMP. Any new or replacement fencing will be wildlife-friendly including the use of a plain top wire.	Land manager, TMR and associated contractors	Monitoring of this management action will be undertaken by the land manager or suitable qualified person within 3 months of the offset area being legally secured and during quarterly inspections. Quarterly inspections will monitor and document evidence of unauthorised access to the offset area. Quarterly inspections will monitor and document if signage is fit for purpose	Evidence of unauthorised persons, vehicles, and/or stock is detected at any point. Evidence of stock is detected at any point during exclusion times. Damage is detected to any fence or sign.	For evidence of unauthorised persons, vehicles, and/or stock; or evidence of stock in an exclusion area: Step 1: determine access method • Upon being notified or becoming aware of prohibited access to the offset area, the Landholder is to reassess access protocols for any lessees etc., signage and general access within one fortnight. • Damage to signage will be repaired within one fortnight of noting the damage. • If there are areas that have been negatively impacted, the regeneration of those areas will be added to the monitoring sites at *Table 20* and monitored during the quarterly inspections. • Signage will be repaired and maintained as required by the Pastoral Manager, Landholder or suitable qualified person appointed by the approval holder.

Table 13: Greenridge offsets - management actions, triggers and corrective actions

The management actions shown in this table are consistent with the risks identified in the listing advice, conservation advice, and threat abatement plans relevant to each matter.

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
Degradation of Coastal Swamp Oak TEC	Coastal Swamp Oak TEC rehabilitation and enhancement plan	Rehabilitate 22.03 ha (AU3) of Coastal Swamp Oak TEC to achieve the interim targets and completion criteria targets as listed in *Table 16.*	Implementation of the Coastal Swamp Oak TEC rehabilitation and enhancement plan upon approval of this OAMP (refer *Appendix C*). Implementation of this rehabilitation plan will be undertaken over a 5-year period to minimise the impact of seasonal variability on tubestock survival. First planting will be scheduled for spring 2024 with timing dependent on seasonal conditions.	TMR and associated contractors	Monitoring of offset value habitat quality scores will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the habitat quality scores in the interim performance targets and completion criteria to determine the progress of the offset area and recorded as part of reporting (see *Section 8*).	Coastal Swamp Oak TEC habitat quality scores, performance targets and completion criteria (*Table 16*) are not on track to being achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger: • Within one month after detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. • Within two months after detection of the trigger, complete a re-evaluation of the suitability of the relevant management measures in the OAMP. The re-evaluation must identify appropriate corrective actions. Step 2: Implementation of corrective action/s The appropriate corrective actions identified under Step 1 will be implemented as soon as practicable, and in any case within six months after detection of the trigger. Lessons learnt from earlier plantings will inform processes and guide continual improvement and innovation in the establishment of the TEC.
	Coastal Swamp Oak TEC management	Increase the habitat quality scores for remnant and regrowth Coastal Swamp Oak TEC (AU1, AU2, AU4) based on the results of baseline and subsequent monitoring events to achieve the interim targets and completion criteria targets as listed in *Table 16*.	Pest animal control management actions in Coastal Swamp Oak TEC Invasive plants and environmental weed control management actions in Coastal Swamp Oak TEC. Undertake planned burns in remnant and regrowth Coastal Swamp Oak TEC in accordance with relevant regional ecosystem fire management guidelines (see *Table 15*). Strategic ecological thinning in regrowth and remnant areas if recommended by appropriate qualified ecologist.	TMR and associated contractors	Monitoring of offset value habitat quality scores will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the habitat quality scores in the interim performance targets and completion criteria to determine the progress of the offset area and recorded as part of reporting (see *Section 8*).	Coastal Swamp Oak TEC habitat quality scores, performance targets and completion criteria (*Table 16*) are not on track to being achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger: • Within one month after detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. • Within two months after detection of the trigger, complete a re-evaluation of the suitability of the relevant management measures in the OAMP. The re-evaluation must identify appropriate corrective actions. Step 2: Implementation of corrective action/s The appropriate corrective actions identified under Step 1 will be implemented as soon as practicable, and in any case within six months after detection of the trigger.
Degradation of habitat Koala and GHFF	Koala and GHFF management	Increase the habitat quality scores for remnant and regrowth Koala and GHFF habitat (AU4) based on the results of baseline and subsequent monitoring events to achieve the interim targets and completion criteria targets as listed in *Table 16*.	Pest animal control management actions in Koala and GHFF habitat Invasive plants and environmental weed control management actions in swamp oak TEC. Undertake planned burns in remnant and regrowth Koala and GHFF habitat in accordance with relevant regional ecosystem fire management guidelines (*Table 15*). Strategic ecological thinning in regrowth and remnant areas (e.g., non-eucalypt and non-	TMR and associated contractors	Monitoring of offset value habitat quality scores will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the habitat quality scores in the interim performance targets and completion criteria to determine the progress of	Koala and GHFF habitat quality scores, performance targets and completion criteria (*Table 16*) are not on track to being achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger: • Within one month after detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. • Within two months after detection of the trigger, complete a re-evaluation of the suitability of the relevant management measures in the OAMP. The re-evaluation must identify appropriate corrective actions.

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
			GHFF habitat trees) if recommended by an appropriate qualified ecologist.		the offset area and recorded as part of reporting (see *Section 8*).		Step 2: Implementation of corrective action/s The appropriate corrective actions identified under Step 1 will be implemented as soon as practicable, and in any case within six months after detection of the trigger.
Habitat or vegetation loss through land clearing	Maintain the extent of offset value habitat within the offset area	No unapproved and/or intentional clearing of vegetation within the Coastal Swamp Oak TEC, Koala and/or GHFF offset area, except for clearing that is required for fencing, access, firebreaks, ecological restoration and public safety.	Protection of the offset area via a declared area under Section 19E and 19F of the VM Act, as described in *Section 9* to be registered within 12 months of the date of the approval (17 March 2024).	TMR and associated contractors	Updated OAMP with approved declaration of the area for Coastal Swamp Oak TEC, Koala and/or GHFF offset. Reporting to the Australian Government consistent with any and all EPBC Act approval(s).	Any activities in contravention of the declared area management plan.	Step 1: Investigate cause of trigger (e.g. unauthorised access) • As soon as practicable, and in any case within one month of detection of the trigger, identify appropriate corrective actions. Step 2: Implementation of corrective action/s • As soon as practicable, and in any case within two months of detection of the trigger, the appropriate corrective actions must be implemented. These may include (though are not limited to) additional fencing and/or signage and security for the offset area.
			Construction and maintenance of access tracks, fencing and firebreaks will be undertaken in accordance with the requirements of *Table 11.* If vegetation clearing is required for fencing, access (i.e. weed control), firebreaks or public safety, it must be undertaken in accordance with best practice management methods and any applicable legislative requirements. Any clearing and/or ecological thinning will be in accordance with the advice of an appropriately qualified ecologist.	TMR and associated contractors	Quarterly inspections will monitor and document if any unapproved and/or intentional clearing of vegetation within the Coastal Swamp Oak TEC, Koala and/or GHFF offset area Quarterly inspections will monitor and document vegetation clearing that has occurred for fire break, access road or fence line maintenance.	Any unapproved and/or intentional clearing of vegetation within the Coastal Swamp Oak TEC, Koala and/or GHFF offset area	
Degradation of habitat by overgrazing	Grazing management	Domestic livestock to be excluded from offset areas	Ensure suitable fencing to exclude livestock from offset areas	Land manager	Quarterly inspections will monitor and document if presence or evidence of livestock are present on the property	Detection and/or evidence of livestock on the property	Upon being notified or becoming aware of prohibited livestock grazing on the property, the land manager is to remove the livestock from the area (if present) and assess the adequacy of fencing within 10 days. The land manager is to undertake fence maintenance and repairs to resecure the offset area within 10 days.
Entanglement of GHFF in barbed wire fencing	Fencing	All new and replacement fencing to be wildlife-friendly	Any new or replacement fencing will be wildlife-friendly including the use of a plain top wire.	Land manager, TMR	Quarterly inspections	When fencing is being replaced or new fencing is planned/constructed.	Any new or replacement fencing will be wildlife-friendly including the use of a plain top wire.
Introduction, establishment and spread of non-native weeds including restricted invasive plants listed under the Biosecurity Act 2014 *(Qld)*	Invasive plants and environmental weed management listed under the *Biosecurity Act 2014* (Qld)	Weed cover must not exceed 10% cover of the offset area by Year 20. No new restricted invasive plants listed under the *Biosecurity Act 2014* (Qld) are identified at any monitoring site (based on subsequent monitoring events).	All vehicles accessing the offset area are required to have undergone a weed inspection and vehicle hygiene check, confirming that they are weed free, before accessing the site. Chemical and/or mechanical control of all invasive plants and environmental weeds in accordance with the control measures outlined in the Biosecurity Queensland Fact Sheets or other sources of information. If a new weed infestation is identified, consult with local NRM Catchment Group, Healthy	Land manager, TMR and associated contractors	Map invasive plant and environmental weeds as part of baseline and ongoing habitat quality monitoring. Quarterly inspections will observe and record the presence of weeds and success of previously applied weed control measures. The inspection will include before and	Pest plants dominate isolated area and or occur in an area greater than 10% of the offset area. A pest weed species is identified at one or more monitoring sites, or opportunistically during any site	Step 1: Investigate cause of trigger Step 2: Implementation of corrective action(s) Upon being notified or becoming aware of pest plants dominating isolated areas and or occupying greater than 10% of the offset area, TMR is to implement pest control measures within one month. These measures may include, and are not limited to: • foliar spraying • basal bark spraying • stem injection

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
			Land and Water, Council and Queensland Department of Agriculture and Fisheries to determine the invasiveness of the weed and tested/ recommended control measures Control the spread of new infestation/s. Treat new infestation/s promptly to reduce the extent and spread of the infestation.		after photos of the weed control area.	inspection or other monitoring.	• cut stump • cut and swab • stem scraper • wick applicators • mechanical removal.
Increased impacts of feral animals in the offset area.	Pest animal management	Reduction in the observed abundance of wild dog, European foxes and other feral animals from the first year of management.	Participate fully in, and cooperate with, any and all regional pest control programs, unless those would otherwise contravene a part of this OAMP. Implementation of fire ant control baiting program. TMR will coordinate this program with the Department of Agriculture and Fisheries who have carriage of fire ant control programs. Pest animal control program to be implemented via appropriately qualified person/s. Control feral pigs, European foxes and wild dogs via a coordinated multiple pronged management program. Pest control will be undertaken twice within a 3-month period. Additionally, if the land manager, during quarterly inspections of the offset area notes an incursion of feral deer, feral pig or wild dog activity, an additional coordinated multiple pronged management program is to be instigated until the increased activity has ceased and/or the deer, feral pigs and wild dogs are removed.	Land manager, TMR and associated contractors	Monitoring of this management action will be undertaken by an appropriately qualified person appointed by TMR at least four times annually. Quarterly inspections will involve traversing the offset area with streams, low lying areas and vehicle access tracks being noted to record the presence of wallow holes, tracks and visual incidents in the offset area. If detected, these areas will be GPS-recorded and photographed and rechecked at the next quarterly inspection.	Any observed evidence of feral animal presence and/or habitat damage in the offsets area	• Upon being notified or becoming aware of pest animal populations exceeding the threshold, the land manager is to implement all necessary or appropriate control measures needed to reduce pest animal populations to below trigger thresholds. The land manager is to have completed implementation of all necessary or appropriate pest control measures within one month. • The land manager may approach neighbouring landowners to discuss the increased pest animal presence and an integrated control program may be developed. If an integrated control program is considered appropriate, the land manager will make best endeavours to reach agreement with neighbouring landowners to implement such a program. • If impacts from the pest animal populations have not naturally remediated within six months of completion of implementation of the control measures, the land manager is to undertake and complete all works required to remediate those impacts.
Degradation of habitat by feral pigs	Feral pig management	Reduction in mean feral pig relative abundance from the first year of management. With pigs, the gestation period is 3 months, so if control actions are undertaken 3 months apart, the population can be heavily impacted.				Detection of any fire ant nests, which will be reported to the Department of Agriculture and Fisheries. An increase in mean feral pig abundance from first year and subsequent monitoring events.	
Fire: the impact from uncontrolled wildfire or inappropriate fire regimes cause degradation in offset area habitat quality	Fire management	Uncontrolled fire does not occur in the offset area. Planned burns undertaken in remnant and regrowth Coastal Swamp Oak TEC, Koala and GHFF habitat in accordance with relevant RE fire management guidelines (*Table 15*).	Implement fire management in accordance with requirements in this OAMP, including: • Fire breaks reformed every 2 years and slashed as required to enable access and maintain fuel loads below 3,000 tonnes of dry matter yield/ha. • Wildfire response procedure developed • Undertake planned burns in remnant and regrowth Coastal Swamp Oak TEC, Koala and GHFF habitat in accordance with relevant RE fire management guidelines (*Table 15*) and/or weed control works and/or Coastal Swamp Oak TEC rehabilitation and enhancement plan. • Planned burns target mosaic burning resulting in patches of unburnt vegetation providing variation in the stages of response from fire and	Land manager, TMR and associated contractors	Quarterly inspections will monitor and document if there is evidence of wildfire, prohibited burning or force majeure events. Quarterly inspections will monitor and document if a prescribed low-intensity ecological burn has occurred, and recorded in the Annual report with the written advice from an ecologist or other suitably qualified person (e.g. Fire Warden) Weed cover is to be monitored by the same methodology and at the same time	The occurrence of deliberately lit fires. Offset area habitat degradation as a result of a lack of or inappropriate fire regimes as determined through monitoring.	Step 1: Investigate cause of trigger • Within one month of detection of the trigger, complete an investigation into the reasons why the fire management measures have resulted in a decrease in habitat quality scores. That investigation must review adherence to the fire management measures and must identify appropriate corrective actions. Step 2: Implementation of corrective action/s • Corrective action: upon being notified or becoming aware of a prohibited fire in the offset area, the landholder is to reassess and implement new access protocols for any lessees etc., signage and general access within one fortnight. • Corrective action: subsequent to any occurrence of fire in the offset area, the land manager suitable qualified person appointed by the Landholder will: • inspect and repair, and widen if necessary, all firebreaks; and

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
			diversity of habitat. A mosaic is achieved with generally 40–80 per cent burnt within the target communities (refer Southeast Queensland Bioregion Planned Burn Guidelines, Qld Government 2013)				• reassess fuel load reduction practices.
Offset fails to achieve the performance targets and completion criteria within the 10- or 20-year timeframe	Achieve the performance targets and completion scores in *Section 6* at Year 10 or Year 20.	The performance targets and completion criteria are achieved by Year 10 or Year 20.	All management actions outlined in in this OAMP will be implemented to ensure that the interim performance targets and completion criteria are achieved.	TMR and associated contractors	Monitoring of the offset area will be undertaken in accordance with *Section 8*. The results of monitoring events will be compared against the performance targets and completion criteria to determine the progress of the offset area and recorded as part of reporting.	The performance targets and completion criteria are not achieved by Year 10 or Year 20.	Step 1: Investigate cause of trigger • Within one month of detection of the trigger, complete an investigation into the reasons why the interim performance targets or the completion criteria were not achieved within the specified timeframes. This investigation must re-evaluate the suitability of the relevant management measures in the OAMP and must identify appropriate corrective actions. Step 2: Implementation of corrective action/s As soon as practicable, and in any case within eight months of detection of the trigger, complete implementation of the corrective actions identified under Step 1. These may include (though are not limited to): • Increasing the frequency and intensity of pest animal and weed control measures or revising the type of measures to be implemented. • Modifying the fire management measures, to better support enhancement of offset values. If the investigation under Step 1 recommends changes to the management regime, then as soon as possible, and in any case within six months of detection of the trigger, implement a revised OAMP incorporating those recommended changes.
Site access	Unauthorised persons, vehicles, and/or stock are prevented from accessing the site	Public access to the offset area is prohibited. Access is restricted to those authorised persons required to undertake actions described in this management plan, including the landholder, and approval holder staff and their contractors and assigns. The offset area is not to be utilised for any purpose including recreational activities, or any other activities that deter from achieving the outcomes of this plan. No evidence of unauthorised persons, vehicles, and/or stock is detected on site at any point.	Fences will be maintained to prevent unauthorised access and to control stock presence. Signs will be erected at all entrances and potential access points to the site stating that access to the site is forbidden. All signs and any new planned fences will be erected within six months of the approval of this OAMP.	Land manager, TMR and associated contractors	Monitoring of this management action will be undertaken by the land manager or suitable qualified person within 3 months of the offset area being legally secured and during quarterly inspections. Quarterly inspections will monitor and document evidence of unauthorised access to the offset area. Quarterly inspections will monitor and document if signage is fit for purpose	Evidence of unauthorised persons, vehicles, and/or stock is detected at any point. Evidence of stock is detected at any time. Damage is detected to any fence or sign.	For evidence of unauthorised persons, vehicles, and/or stock; or evidence of stock in an exclusion area: Step 1: determine access method • Upon being notified or becoming aware of prohibited access to the offset area, the Landholder is to reassess access protocols for any lessees etc., signage and general access within one fortnight. • Damage to signage will be repaired within one fortnight of noting the damage. • If there are areas that have been negatively impacted, the regeneration of those areas will be added to the monitoring sites at *Table 20* and monitored during the quarterly inspections. • Signage will be repaired and maintained as required by the land manager, TMR or suitable qualified person appointed by the approval holder.

Threat to offset values	Management activity	Performance objectives	Management actions (where, when and how the activity will be carried out).	Who will be carrying out the activity	Monitoring and reporting	Trigger for adaptive management and corrective action(s)	Corrective action and timing
		Fences and signage are erected at all necessary points and kept in good repair throughout the life of the EPBC Act approval.					

Table 14: Tabooba offsets fire management strategy

Offset area	Assess-ment unit	Area (ha)	Corresponding regional ecosystem	Regional ecosystem recommended fire strategy	Recommendations from the *Planned Burn Guidelines South East Queensland Bioregion* (Queensland Government 2013)
Koala and GHFF	AU1	49.84	12.8.16 remnant	SEASON: Summer to late autumn. INTENSITY: Low. INTERVAL: 3-6 years. STRATEGY: Aim to burn 40-60% of any given area. Spot ignition in cooler or moister periods encourages mosaics. ISSUES: Control of weeds is a major focus of planned burning in most areas. Maintain ground litter and fallen timber habitats by burning only with sufficient soil moisture. Burning should aim to produce fine scale mosaics of unburnt areas.	Key indicators of a healthy open forest or woodland (refer to the photos below): • Healthy open forest has a grass; sedge; or shrub-dominated understorey (or various mixtures); with a few canopy species of variable sizes (to eventually replace the canopy) and a healthy canopy. • Lower and mid stratum trees are scattered (e.g. eucalypts, wattles and she-oaks), but are not having any noticeable shading effects on ground stratum plants. • Fallen logs and hollow bearing trees may be present. • In shrubby open forest, shrub layer is dominated by sclerophyllous (hard-leaved) species (e.g. grass trees, banksia, pea-flowers) with healthy foliage. • In grassy or mixed open forest, grass clumps and/or sedges are well formed. • Grassy open forest is easy to walk through or see through. • Generally few weeds present.
	AU2	145.02	12.8.16 advanced regrowth	Follow guidelines for AU1 (12.8.16) with minimum interval of 6 years between fires until remnant status is achieved.	
	AU4	50.62	12.8.14 remnant	SEASON: Summer to winter. INTENSITY: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. a: Low to moderate. INTERVAL: 4-8 years maintains a healthy grassy system. 8-20 years for shrubby elements of understorey. STRATEGY: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). a: Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved. ISSUES: Typically lower rainfall than other moist RE types, but prefers sheltered slopes and gullies where it maintains moist environment. Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. It is essential that wildfires are not the sole source of fire in this ecosystem.	
	AU5	19.8	12.8.14 advanced regrowth	Follow guidelines for AU1 (12.8.14) with minimum interval of 8 years between fires until remnant status is achieved.	

Table 15: Greenridge offsets fire management strategy

Offset area	Assess-ment unit	Area (ha)	Corresponding regional ecosystem	Regional ecosystem recommended fire strategy	Recommendations from the *Planned Burn Guidelines South East Queensland Bioregion* (Queensland Government 2013)
Coastal Swamp Oak TEC	AU1	14.20	12.1.1 remnant	SEASON: Early winter or storm burning seasons. INTENSITY: Low to moderate. INTERVAL: Aim for a 6-7 year minimum threshold at a broad scale planning level. STRATEGY: Aim to retain at least 25-50% unburnt in any given year. This RE needs disturbance to maintain structure. Use fire to reduce opportunistic native (*Allocasuarina* spp.) or weed species dominance. Active fire management is required to reduce the accumulation of a significant dry fuel layer. Burns planned in surrounding REs should account for the disturbance requirements of this fringing vegetation. ISSUES: The fire ecology of this TEC is poorly known. Monitoring the impact of fire and recovery of the TEC is highly desirable. A long fire interval could increase fire intensity when fire occurs, thus detrimentally affecting the tree layer. Recovery should be relatively quick (approximately 10 years to a woodland/open forest community). A 'grassy' ecosystem might be lost if fire is excluded or too frequent (<2 years). Signs of problems in this community might include the regeneration of 'whipstick' communities and/or the presence of weeds (such as lantana). Fire exclusion and buffering from fire is not necessary. Where obligate seeding allocasuarinas are present in the under- and mid-storeys, fires causing 100% leaf scorch will kill these trees; therefore, fires of this intensity should be avoided. A seven-year minimum fire interval is required for obligate seeding allocasuarinas and casuarinas.	Fringing Coastal Swamp Oak TEC are fire-adapted communities which should be burnt in association with surrounding fire-adapted communities. Key indicators of health in fringing swamp she-oak forest: • Open to dense canopy of swamp she-oaks • *Melaleuca* and/or mangroves may be intermingled on the margins. • The ground stratum may be present as a sparse cover of salt-tolerant plants (e.g. marine couch); a cover of fallen 'leaves' (cladodes) and devoid of ground plants or with reeds, sedges and/or ferns. • Few or no weeds e.g. groundsel are present. • These areas may be subject to tidal inundation. Signs of where fire management is required in fringing swamp she-oak forest: • It is difficult to see through or walk into the forest • Increasing infestation of weeds, particularly groundsel • Accumulation of dead material in sedge/fern understorey where present • Build up of fine fuels such as dead grass material, leaf litter, suspended leaf litter, bark and twigs. Accumulation of elevated fuels is high or above.
	AU2	5.16	12.1.1 regrowth		
	AU3	22.03	RE12.1.1 non-remnant (cleared)	Fire exclusion. Manage as per AU1 and AU2 when vegetation meets high value regrowth and or RE 12.1.1 remnant status.	Fire exclusion. Manage as per AU1 and AU2 when vegetation meets high value regrowth and or RE 12.1.1 remnant status.
	AU4	22.78	12.3.20 remnant	SEASON: Late summer to mid-winter (after rain). INTENSITY: Planned and occasional unplanned burns (typically of higher intensity) influence the ecology of *Melaleuca* ecosystems. INTERVAL: Heath 8-12 years, Sedge 12-20 years, Mixed grass/shrub 6-20 years. STRATEGY: Aim for a 25-70% burn mosaic (in association with surrounding ecosystems, as *Melaleuca* ecosystems often occur in patches or along natural drainage lines). Fires may, depending on the conditions and type of vegetation, burn areas larger than just the *Melaleuca* ecosystem. Ensure secure boundaries from non-fire-regime-adapted ecosystems. Consider the needs of *Melaleuca* ecosystems based on understorey (i.e., heath dominated, sedge dominated or mixed grass/shrub) when planning burns. High soil moisture (or presence of water on the ground) is required, as avoidance of peat-type fires must be maintained. ISSUES: Fire regimes for *Melaleuca* ecosystems require further fire research. *Melaleuca* forests are fire-adapted, but too high an intensity or frequent fire will slow or prevent regeneration and lead to lower species richness (since these communities contain numerous obligate seed regenerating species that require sufficient fire intervals to produce seed). High intensity fires may kill trees and lead to whipstick regeneration. Too frequent fire may result in a net loss of nutrients over time from an already nutrient poor system. Fire associations are significantly influenced by understorey composition. *Melaleuca* communities with a heath understorey should burn in a similar way to coastal heath (8-12 years). Sedge understorey communities will burn in association with the surrounding ecosystems (so will often burn with them but sometimes not, such that these communities have a slightly less fire frequency). Mixed understorey communities burn in a similar way to dry sclerophyll, in association with the surrounding dry sclerophyll, though somewhat less frequently due to the additional moisture present in *Melaleuca* communities.	Key indicators of a healthy *Melaleuca* community • Understorey may contain a sparse to dense ground layer of grasses, sedges, forbs, ferns, orchids, shrubs, or any mix of these in the understorey, with *Melaleuca* species of variable sizes and a healthy canopy. • Cabbage tree palms may be present in the mid stratum or sub-canopy of some coastal communities • Permanent or seasonal standing water may be present. Some of the following may indicate that fire is required to maintain a *Melaleuca* community: • There is a dense accumulation of dead material (grasses/sedges/ferns) and grasses are beginning to collapse (no longer erect) • Increasing density of monkey vine (*Parsonsia* spp.) in the mid stratum • Surface and near-surface fine fuels such as leaf litter, bark and twigs have accumulated to High hazard (using the Overall Fuel Hazard Assessment Guide). • There has been a mass germination of *Melaleuca* in amongst or just above the ground layer • There has been a flush of pine wildlings or groundsel which have grown up and begun to shade out ground layer. Sometimes these form a whipstick stand of many closely spaced narrow trees.
Koala	AU4	28.22	12.3.20 remnant		
	AU5	4.74	12.3.20 regrowth		
	AU6	12.48	12.3.20 non-remnant (cleared)		
GHFF	AU4	28.22	12.3.20 remnant		
	AU5	4.74	12.3.20 regrowth		
	AU6	12.48	12.3.20 non-remnant (cleared)		

Offset area	Assess-ment unit	Area (ha)	Corresponding regional ecosystem	Regional ecosystem recommended fire strategy	Recommendations from the *Planned Burn Guidelines South East Queensland Bioregion* (Queensland Government 2013)
Saltmarsh			RE 12.1.2	STRATEGY: Do not burn deliberately. No fire management required. Largely non-flammable vegetation.	Limit fire encroachment into mangroves and saltmarsh Mangroves do not require fire and generally do not burn. Sometimes mangroves can be scorched in nearby planned burning operations or wildfire, but it is rare that any lasting damage is done. Care needs to be taken when burning around saltmarsh however, as it is potentially flammable. The main strategy is to burn with high tides or recent rain with groundwater seepage protecting saltmarsh vegetation. Although saltmarsh may occasionally burn, do not intentionally introduce fire. In most instances fire management should aim to limit fire encroachment into mangroves and saltmarsh areas maintaining mosaic burning in surrounding fire-adapted vegetation communities.

Plate 1: RE 12.8.16	*Plate 2: RE 12.1.1*	*Plate 3: RE 12.3.20*	*Plate 4: RE12.1.2*
			

5.1 Responsible parties

As the approval holder, TMR is accountable for implementing the OAMP, and commits to doing so. Completing the actions listed in the OAMP will be ensured through the annual reporting requirements (*Section 8*). TMR will coordinate reporting, reviewing, inspections, auditing and any adaptive management changes to the plan. A person within TMR (e.g. Environment Manager or equivalent) will be assigned the responsibility of managing offset requirements for TMR.

TMR will maintain accurate records substantiating all activities related to the management of the offset area, and the monitoring of the offset site, as described in *Section 8*. These records will be made available to the Department on request.

TMR, its subcontractors or assigns, will undertake the offset management actions and day to day management of the site, including fencing, managing fire breaks, weed management, feral animal management and grazing management. TMR, its subcontractors or assigns, will also undertake the landholder reporting as per *Table 19*.

TMR will engage suitably qualified persons to undertake the biocondition assessments, ecological studies and surveys, prepare reports and undertake inspections, as required in *Table 18* and *Table 19*.

5.2 Emergency procedures

Incidents identified at any of the offset sites will be reported by the lessee to TMR. The level of severity will dictate the necessary actions through TMR's formal incident management system. General incidents, for example, wild dog incursion, will be managed by TMR and responses to incidents adversely impacting habitat quality on the offset site, or MNES directly, will be coordinated by TMR, to ensure remediation or enhanced management measures (*Table 12* and *Table 13*) are implemented to address the incident as soon as reasonably possible.

TMR will notify the Department (within the timeframe stipulated by the action approval conditions) after becoming aware of any incident, non-compliance with conditions, or non-compliance with any of the commitments made in this OAMP (see also *Section 10*).

6 Offset completion criteria and performance targets

Offset completion criteria have been determined for each MNES based on an understanding of the specific habitat, connectivity and other ecological values for Coastal Swamp Oak TEC, Koala, and GHFF. These criteria were initially derived from detailed ecology survey information of both the impact and offset sites, as detailed in the OS.

The targeted habitat quality meets guidelines published by ANZMEC (2000),[16] stating completion criteria should be:

1. Specific enough to reflect the unique set of environmental, social and economic circumstances.
2. Flexible enough to adapt to changing circumstances without compromising objectives.

[16] *Strategic Framework for Mine Closure.* (2000). Australian and New Zealand Minerals and Energy Council and Minerals Council of Australia. Canberra, ACT.

3. Include environmental indicators suitable for demonstrating that rehabilitation trends are heading in the right direction.
4. Undergo periodic review resulting in modification if required due to changed circumstances or improved knowledge.
5. Based on targeted research which results in more informed decisions.

The completion criteria and the 'with offset' non-native species attribute (provided in *Appendix J*, *Appendix K* and *Appendix L*) establishes the acceptable limits to non-native species in the offset area. These will be achieved as a requirement of this OAMP.

Over the course of the management period, a set number of interim completion criteria have been proposed for each MNES to track the trajectory of habitat quality improvement towards the desired final completion criteria (*Table 16*). The timing for these interim targets corresponds with the 5 yearly targeted species surveys and detailed ecological condition monitoring in Years 5, 10, 15 and 20.

Interim targets were derived for each MNES by identifying the attributes expected to increase over the period of the approval. The values were determined by differentiating between specific attributes, of which the majority were longer term targets (e.g. species richness, tree canopy cover, number of large trees) and those where an initial benefit could be realised early (e.g. recruitment of woody species, non-native plant cover).

The completion of management actions identified in *Table 12* and *Table 13* will enable the offset sites to improve and achieve the scores required, thus meeting and maintaining the completion criteria required of the offset. The annual reports (see *Section 8*) will provide transparency regarding how the site management actions are being implemented, and where relevant, identify any force majeure events impacting the offset site, and any non-compliance with the OAMP.

Table 16: Interim targets and completion criteria

MNES	EPBC status	Stage 1 impact area (ha)	Impact site quality (- /10)	Offset property	Offset Area	Habitat start quality score (- /10)	Habitat quality score Year 5 (- /10)	Habitat quality score Year 10 (- /10)	Habitat quality score Year 15 (- /10)	Habitat quality score Year 20 (- /10)
Coastal Swamp Oak TEC	END	15.9*	8	Greenridge	Remnant RE 12.1.1 AU1: 14.2 ha	8.0	8.0-8.5	9.0		
				Greenridge	Regrowth RE 12.1.1 AU2: 5.16 ha	7.0	7.0-7.5	7.5-8.0	8.0-8.5	9.0
				Greenridge	Non-remnant (cleared) RE 12.1.1 AU3: 22.03 ha	3.0	3.5-4.0	4.0-4.5	5.0-5.5	6.0
				Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	8.0	8.0-8.5	9.0		
				Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	7.0	7.0-7.5	7.5-8.0	8.0-8.5	9.0
				Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	2.0	3.0	4.0-6.0	6.0-8.0	9.0
Phascolarctos cinereus Koala	VUL	73.81	7	Tabooba	Remnant RE 12.8.16 AU1: 49.84 ha	8.0	8.0-8.5	9.0		
				Tabooba	Advanced regrowth RE 12.8.16 AU2: 145.02 ha	6.0	7.0-7.5	8.0		
				Tabooba	Young regrowth RE 12.8.16 AU3: 48.10 ha	4.0	4.0-4.5	5.0-5.5	6.0-6.5	7.0
				Tabooba	Remnant RE 12.8.14 AU4: 50.62 ha	8.0	8.0	8.0		
				Tabooba	Advanced regrowth AU5: 19.80 ha	7.0	7-7.5	8.0		
				Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	8.0	8.0	8.0		
				Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	7.0	7.0-7.5	7.5-8.0	8.0-8.5	9.0
				Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	4.0	4.0-4.5	5.0-5.5	6.0-6.5	7.0
Pteropus poliocephalus GHFF	VUL	68.76	7	Tabooba	Remnant RE 12.8.16 AU1: 49.84 ha	6.0	6.0	6.0		
				Tabooba	Advanced regrowth 12.8.16 AU2: 145.02 ha	5.0	5.5-6.5	7.0		
				Tabooba	Young regrowth RE 12.8.16 AU3: 48.10 ha	5.0	5.0-5.5	5.5	5.5-6	6.0
				Tabooba	Remnant RE 12.8.14 AU4: 50.62 ha	6.0	6.0-6.5	7.0		
				Tabooba	Advanced regrowth RE 12.8.14 AU5: 19.80 ha	5.0	5.0-5.5	6.0		
				Greenridge	Remnant RE 12.3.20 AU4: 28.22 ha	6.0	6.0-6.5	7.0		
				Greenridge	Regrowth RE 12.3.20 AU5: 4.74 ha	6.0	6.0	6.0	6.0	6.0
				Greenridge	Non-remnant RE 12.3.20 AU6: 12.48 ha	2.0	2.5-3.0	3.0-4.0	5.0-6.0	7.0

7 Offset site management and protection additional to those that currently exist

Securing the offset area will add additional protection for biodiversity values from clearing[17] and provide additional management of weeds and pest animals that are additional to the general requirements for biosecurity.

The offset areas are currently not protected from timber harvesting, the inappropriate use of hot fires or the under-sowing of exotic pasture species by either the VM Act or the EPBC Act due to exemptions within the legislative frameworks for the continuing use of the land. Remnant vegetation areas are protected from broadscale clearing under the VM Act; however, the clearing of regrowth is permitted (see the offsets maps at *Figure 8* to *Figure 10)*. Maintaining the existing condition of regulated vegetation and land for habitat values is not addressed under the VM Act.

The *Biosecurity Act 2014* (Qld) (the **Biosecurity Act**) imposes a 'general biosecurity obligation' on all Queenslanders to manage biosecurity risks that are under their control and that they know about or could reasonably be expected to know about.[18] In practical terms, this means that:

- If you are a livestock owner, you are expected to stay informed about pests and diseases that could affect or be carried by your animals, as well as weeds and pest animals that could be on your property. You are also expected to manage them appropriately.
- If you are a landowner, you are expected to stay informed about the weeds and pest animals (such as wild dogs) that could be on your property. You are also expected to manage them appropriately.

The Biosecurity Act assigns the pests identified in the offset areas as Restricted Matters in Categories 1-7 and requires the following management as shown below in *Table 17*.

Table 17:* Biosecurity Act 2014 *(Qld) obligations

Category	What is required	Examples
1	Must advise an authorised officer within 24 hours of becoming aware	Electric ant/ Little Fire ant, Red imported fire ant
2	Must advise an authorised officer within 24 hours of becoming aware	Noxious fish, including alligator gar and black pacu
3	Must not distribute, be traded or released into the environment	Most invasive weeds, pest animals, noxious fish
4	Must not move	Certain weeds, pest animals, noxious fish such as feral pigs, feral deer, rabbits, Hudson pear and jumping cholla cactus
5	Must not possess or keep	Rabbits, carp, bunny ears cactus
6	Must not feed (except if undertaking a control program)	Feral deer, wild dogs, rabbits, foxes, noxious fish
7	Must, as soon as practicable, kill the restricted matter	Noxious fish, including tilapia, gambusia, carp

[17] *Vegetation Management Act 1999* (Schedule definitions)
[18] See https://www.daf.qld.gov.au/business-priorities/biosecurity/policy-legislation-regulation/biosecurity-act-2014/general-biosecurity-obligation

The obligations in the OAMP are additional to these general obligations, in that control is required once thresholds as detailed in *Table 12* and *Table 13* are met, which initiates the respective controlling actions. For example, there is a requirement to control feral pigs if numbers in excess of 12 are observed in any one property inspection; this is above and beyond the requirements of the Biosecurity Act, as is the reduction of weed species to 10% of the offset area over the life of the management plan.

Tabooba is located within the Scenic Rim Regional Council LGA. The council has implemented a Scenic Rim Biosecurity Plan and is committed to the control of declared pest plants within the region. Council states only that 'landowners have a general biosecurity obligation to control declared pest plants on their land'. [19]

Greenridge is located within the Gold Coast City Council LGA. In the council's *Gold Coast Biosecurity Management Plan 2019-2024* landholder's responsibilities are listed as: [20]

- management activities
- best management practice
- good neighbour policy
- general biosecurity obligation for biosecurity matters.

8 Monitoring and reporting

The offsets area monitoring methods are provided in *Table 18*. Habitat quality monitoring is to be undertaken in Years 1 (2025), 5, 10, 16 and 20 to assess comparative changes in habitat condition against baseline data collected on the offset site, as well as attainment and maintenance of the offset completion criteria (see *Section 6*). Further, the monitoring will measure changes resulting from the management actions and variability due to climatic conditions. This will inform the nature and frequency of management actions required and if trigger levels are breached, the use of corrective actions to bring the offset back into compliance.

Note that the methodologies listed, and the RE benchmarks used in the establishment of the baseline data, will be used consistently throughout the reporting period to enable the comparison of data.

The survey methods from the original survey work undertaken in 2022 is described in the OS (BAAM, 2022). A detailed description of these methods is also provided in *Appendix A* of this OAMP.

While undertaking monitoring activities, the responsible person will move between the permanent survey points in a random manner noting any substantial variation in the condition of the offset area between the permanent monitoring points. Any substantial variation is to be noted in the subsequent report.

TMR, its successors or assigns, will maintain accurate and complete compliance records, in keeping with approval condition 39. Additionally, and consistent with approval condition 40, if the

[19] https://www.scenicrim.qld.gov.au/our-environment/biodiversity/pest-plants-and-weeds
[20] https://www.goldcoast.qld.gov.au/files/sharedassets/public/pdfs/policies-plans-amp-strategies/biosecurity-management-plan.pdf

Department makes a request in writing, the approval holder will provide electronic copies of compliance records to the Department within the specified timeframe.

TMR, its successors or assigns, will, as per the approval conditions of the action, provide a Compliance Report annually for each 12-month period following the date of the approval (17 March each year), for the period of the approval. Offset Area Reports describing the progress of the offset area over the relevant 12-month period will be part of those reports until the completion criteria are achieved or the end of the EPBC approval, whichever comes first. The monitoring methodology and schedule is outlined in *Table 18*. The reporting schedule is provided in *Table 19*. The location of the monitoring sites is shown at *Figure 11* and *Figure 12.* The coordinates of the existing baseline monitoring sites are shown in *Table 20.* There are three additional sites required to be established in year 1 to complete the required sampling density as per the *Guide to determining terrestrial habitat quality: A toolkit for assessing land-based offsets under the Queensland Environmental Offsets Policy Version 1.3* (2020).

The Offset Area Reports will contain records substantiating all activities relevant to the implementation and management of the offsets.

TMR or a suitably qualified person appointed by TMR will undertake quarterly inspections of the offset area to observe and record dry matter, pest plants, accessibility (i.e. condition of fencing), evidence of fire and evidence of pest animal incursion. The inspection records will serve as the primary data source for the annual Offset Area Report.

Grass and weed cover measurement is to be undertaken as per the Level 1 methodology described in the *Land Manager's Monitoring Guide* (DERM, 2010).

Dry matter is to be assessed as per the South East Queensland pasture photo standards for pastures on basalt (see *Appendix D*).

Table 18: Monitoring schedule and methodology to be used

Monitoring	Attributes monitored	Timing	Method	Location/s
Surveys undertaken by ecologists in Year 1, 5, 10, 15 and 20				
Targeted Koala and GHFF surveys	Presence and abundance of Koala and GHFF in the offset area, including estimated numbers and location of sightings.	In May, in Year 1 (2025), 5, 10, 15 and 20 after the commencement of each Stage of the Project	*EPBC Act referral guidelines for the vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)* (DoE 2014). *Survey guidelines for Australia's threatened mammals* (SEWPaC 2011).	Across the Koala and GHFF offsets areas
Habitat quality assessments	Landscape-scale attributes • Size of patch • Context • Connectivity Site based attributes • Refer BioCondition Species habitat attributes (Koala and GHFF only) • Quality and availability of food and habitat required for foraging • Quality and availability of habitat required for shelter and breeding • Quality and availability of habitat required for mobility Absence of threats	In May, in Year 1 (2025), 5 10, 15 and 20 after the commencement of each Stage of the Project	In accordance with the *Guide to determining terrestrial habitat quality: A toolkit for assessing land-based offsets under the Queensland Environmental Offsets Policy Version 1.3* For Koala and GHFF, details on habitat parameters relevant to threatened fauna species were evaluated as per the earlier guideline *Guide to determining terrestrial habitat quality: A toolkit for assessing land-based offsets under the Queensland Environmental Offsets Policy* (State of Queensland 2014). The methodology to be utilised for determining the species attributes to be collected are at *Appendix A*. The habitat data scores from the original surveys are provided in Section 5.2 and Appendix 2 (Tabooba) and Section 6.2 and Appendix 3 (Greenridge) of the OS (BAAM 2022). The OAG outputs are shown in Section 10 of the OS (BAAM 2022). Data collection and OAG calculation methods are to be consistent during the life of the OMP	At sites as shown in *Table 20*, *Figure 11* and *Figure 12*

Monitoring	Attributes monitored	Timing	Method	Location/s
BioCondition assessments	• Recruitment of woody perennial species in EDL • Native plant species richness – trees • Native plant species richness – shrubs • Native plant species richness - grasses • Native plant species richness – forbs • Tree canopy height • Tree canopy cover • Shrub canopy cover • Native perennial grass cover • Organic litter • Large trees • Coarse woody debris • Non-native plant cover • Quality and availability of food and foraging habitat • Quality and availability of shelter	In May, in Year 1 (2025), 5 10, 15 and 20 after the commencement of the action	Field observations, vegetation assessment as per the *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland Assessment Manual* (Eyre et al., 2015) Data for each of the ecological condition attributes monitored will be collected at each site (final site locations are to be established) and reported on and presented in a sequential manner (including previous data collected) to quantify change from the baseline condition. This will record the change in each attribute measured and hence the condition of the habitat, thus enabling a statistical comparison to previous years' data and tracking towards attainment of the offset interim and final completion criteria. Scoring is to be consistent with the *Guide to Determining Terrestrial Habitat Quality Version 1.3* (Department of Environment and Science, 2020).	At sites as shown in *Table 20, Figure 11.*and *Figure 12*.
Habitat quality scores for each matter including Coastal Swamp Oak TEC, Koala and GHFF	• Site condition • Site context • Species stocking rate	In May, in Year 1 (2025), 5, 10, 15 and 20 after the commencement of the action	As per the document *How to use the offsets assessment guide* (DSEWPaC, 2012) and baseline methods for scoring Coastal Swamp Oak TEC, Koala and GHFF, as described in the OS (BAAM, 2022). Baseline habitat quality scores for each matter have been provided in Section 5.2 and Appendix 2 (Tabooba) and Section 6.2 and Appendix 3 (Greenridge) of the OS (BAAM 2022).	Per matter area
Note that the methodologies listed, and the RE benchmarks used in the establishment of the baseline data, will be used consistently throughout the reporting period to enable the comparison of data. Refer to Appendix A for a description of the methodology.				

Monitoring	Attributes monitored	Timing	Method	Location/s
Quarterly landholder/approval holder records and monitoring (report to approval holder – end of September, December, March and June each year)				
Forestry operations, native timber harvesting and general vegetation impacts	Any incidence of native plant destruction	Monitored quarterly and reported annually in Offset Area Reports until the offset completion criteria are achieved.	Forestry operations, native timber harvesting and general vegetation impacts	Across the offset areas
Unauthorised impacts to vegetation from activities such as illegal access/ camping	Vegetation, woody debris, grass cover, weed cover, feral animal damage and presence		Landholder or person appointed by the Landholder will undertake quarterly inspections of the offset area to observe and record grass cover levels, weeds, accessibility (e.g., condition of fencing), and evidence of fire, erosion, and feral animal incursion. The inspection records will be provided to the approval holder and serve as the primary data source for the Offset Area Report. Grass cover assessment is to be undertaken as per the DMY measurements in accordance with the SEQ pasture photo standards.[21] Weed cover is to be monitored by the same methodology and at the same time as the grass cover measurements. This is in addition to BioCondition assessments.	
Grazing	Livestock stocking rates	Monitored monthly during grazing periods at Tabooba (dry season) and reported annually until the offset completion criteria are achieved.		
Unplanned fire	Occurrence, control measures implemented, timing and result of the control measures.	Monitored quarterly and reported annually in Offset Area Reports until the offset completion criteria are achieved.		
Weeds	Occurrence, control measures implemented, timing and the result of the control measures.			
Pest animals	Occurrence, control measures implemented, timing, number and type of species and the result of the control measures.		Quarterly inspections will involve traversing the offset area along streams, low lying areas and vehicle access tracks, to record the presence of wallow holes, tracks and any visual incidents. If detected, GPS locations will be recorded and photographed and rechecked at the next quarterly inspection. Any evidence of predation on Koalas and/or GHFF must be	

[21] Available at: https://futurebeef.com.au/wp-content/uploads/2012/02/Wide-Bay-and-South-East-Queensland.pdf

Monitoring	Attributes monitored	Timing	Method	Location/s
			reported immediately to the approval holder and corrective actions implemented.	

Table 19: Reporting schedule

Report Details to DCCEEW	Reporting period	Submission due date
Annual Offset Area Report, which contributes to the Annual Compliance Report detailing photo points (including coordinates), implementation of management actions, any triggers for corrective actions and implementation of those corrective actions, if implemented, and offset condition outcomes, including habitat quality scores, condition of Koala habitat and results of Koala and GHFF surveys, achieved for preceding reporting period.	Annual Offset Area Report for each 12-month period following the date of the approval (17 March each year)	Within 60 business days following the end of each 12-month period (as per approval condition 47).
	17 March annually until the offset completion criteria are achieved and then every 5 years until the end of the approval (30 June 2045).	
Compliance report detailing compliance with approval conditions under the EPBC Act, including compliance with the offset conditions, as detailed in the OAMP.	Compliance Report for each 12-month period following the date of the approval (17 March each year).	
Offset Habitat Quality Reporting including results of targeted fauna surveys, habitat quality and BioCondition monitoring and overall habitat quality scores. Including comparison on habitat quality scores to baseline scoring and provide recommendations for improving habitat quality.	Year 1 (2025), 5, 10, 15 and 20 after the commencement of the action	Contained within the Annual Offset Area Report.

Table 20: Monitoring sites

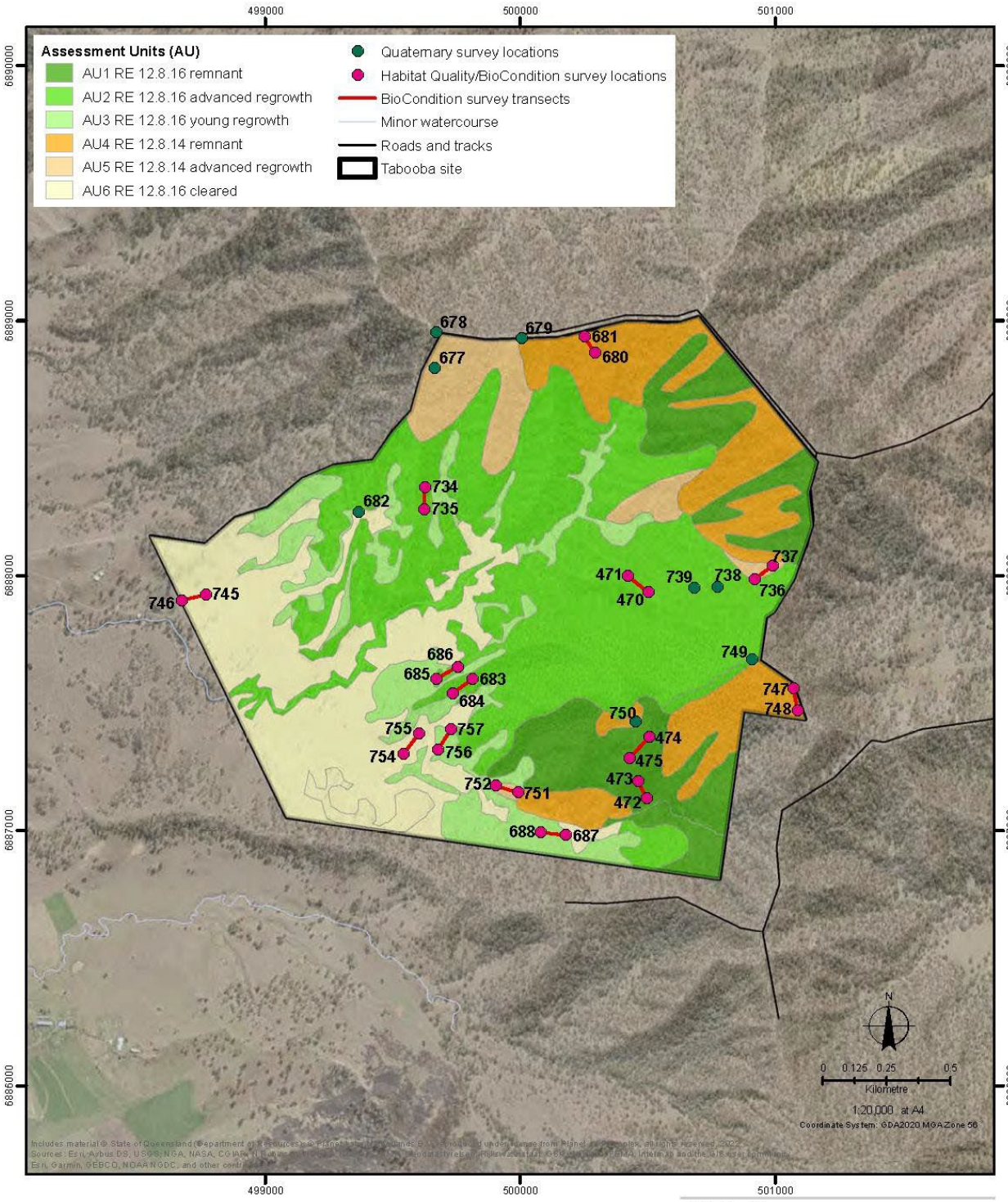
Property	Assessment unit	Regional ecosystem	Survey site number *	Location - easting	Location - northing
Tabooba	AU1	12.8.16 remnant	472	153.005045	-28.141476
Tabooba	AU1	12.8.16 remnant	473	153.004708	-28.140876
Tabooba	AU1	12.8.16 remnant	474	153.005154	-28.139302
Tabooba	AU1	12.8.16 remnant	475	153.004355	-28.140064
Tabooba	AU2	12.8.16 advanced regrowth	470	153.005126	-28.134193
Tabooba	AU2	12.8.16 advanced regrowth	471	153.004300	-28.133600
Tabooba	AU2	12.8.16 advanced regrowth	683	152.998065	-28.137266
Tabooba	AU2	12.8.16 advanced regrowth	684	152.997289	-28.137748
Tabooba	AU2	12.8.16 advanced regrowth	734	152.996182	-28.130461
Tabooba	AU2	12.8.16 advanced regrowth	735	152.996157	-28.131244
Tabooba	AU3	12.8.16 young regrowth	685	152.996628	-28.137245
Tabooba	AU3	12.8.16 young regrowth	686	152.997474	-28.136818
Tabooba	AU3	12.8.16 young regrowth	687	153.001815	-28.142778
Tabooba	AU3	12.8.16 young regrowth	688	153.000801	-28.142683
Tabooba	AU3	12.8.16 young regrowth	756	152.996710	-28.139757
Tabooba	AU3	12.8.16 young regrowth	757	152.997221	-28.139040
Tabooba	AU4	12.8.14 remnant	*to be determined*		
Tabooba	AU4	12.8.14 remnant	680	153.002959	-28.125691
Tabooba	AU4	12.8.14 remnant	681	153.002563	-28.125145
Tabooba	AU4	12.8.14 remnant	747	153.010908	-28.137587
Tabooba	AU4	12.8.14 remnant	748	153.011071	-28.138365
Tabooba	AU4	12.8.14 remnant	751	152.999902	-28.141270
Tabooba	AU4	12.8.14 remnant	752	152.999018	-28.141032
Tabooba	AU5	12.8.14 advanced regrowth	736	153.009347	-28.133732
Tabooba	AU5	12.8.14 advanced regrowth	737	153.010073	-28.133246
Tabooba	AU6	12.8.16 cleared	*to be determined*		
Tabooba	AU6	12.8.16 cleared	745	152.987425	-28.134268
Tabooba	AU6	12.8.16 cleared	746	152.986440	-28.134469
Tabooba	AU6	12.8.16 cleared	754	152.995332	-28.139910
Tabooba	AU6	12.8.16 cleared	755	152.995951	-28.139194
Greenridge	AU1	12.1.1 remnant	836	153.366741	-27.816699
Greenridge	AU1	12.1.1 remnant	837	153.365796	-27.816436
Greenridge	AU1	12.1.1 remnant	840	153.360421	-27.819928
Greenridge	AU1	12.1.1 remnant	841	153.361317	-27.819704
Greenridge	AU1	12.1.1 remnant	962	153.356861	-27.816537

Property	Assessment unit	Regional ecosystem	Survey site number *	Location - easting	Location - northing
Greenridge	AU1	12.1.1 remnant	963	153.357854	-27.816388
Greenridge	AU2	12.1.1 regrowth	844a	153.360137	-27.818366
Greenridge	AU2	12.1.1 regrowth	844b	153.361060	-27.818382
Greenridge	AU2	12.1.1 regrowth	956	153.347132	-27.820104
Greenridge	AU2	12.1.1 regrowth	957	153.346685	-27.819429
Greenridge	AU3	12.1.1 non-remnant	*to be determined*		
Greenridge	AU3	12.1.1 non-remnant	958	153.348034	-27.820474
Greenridge	AU3	12.1.1 non-remnant	959	153.348681	-27.821162
Greenridge	AU3	12.1.1 non-remnant	970	153.349211	-27.815311
Greenridge	AU3	12.1.1 non-remnant	971	153.348397	-27.814794
Greenridge	AU4	12.3.20 remnant	931	153.351146	-27.826806
Greenridge	AU4	12.3.20 remnant	932	153.350176	-27.826815
Greenridge	AU4	12.3.20 remnant	964	153.351871	-27.826742
Greenridge	AU4	12.3.20 remnant	965	153.351901	-27.827602
Greenridge	AU4	12.3.20 remnant	966	153.362203	-27.817387
Greenridge	AU4	12.3.20 remnant	967	153.363043	-27.817842
Greenridge	AU5	12.3.20 regrowth	923	153.345311	-27.821812
Greenridge	AU5	12.3.20 regrowth	924	153.344795	-27.822603
Greenridge	AU5	12.3.20 regrowth	974	153.348986	-27.826244
Greenridge	AU5	12.3.20 regrowth	975	153.348119	-27.825906
Greenridge	AU6	12.3.20 non-remnant	960	153.359976	-27.816328
Greenridge	AU6	12.3.20 non-remnant	961	153.359493	-27.816939
Greenridge	AU6	12.3.20 non-remnant	972	153.348947	-27.816178
Greenridge	AU6	12.3.20 non-remnant	973	153.348566	-27.816998

Coordinates system: WGS84

** Survey site numbers are to be consistent with the baseline data collected for the duration of the OAMP*

Figure 11: Monitoring sites -Tabooba



Data sources:
Vegetation_management_watercourse_and_drainage_feature_map_100k
Published 08/09/2021
Baseline roads and tracks - Queensland
Published 31/03/2022
State of Queensland (Department of Resources) 2022

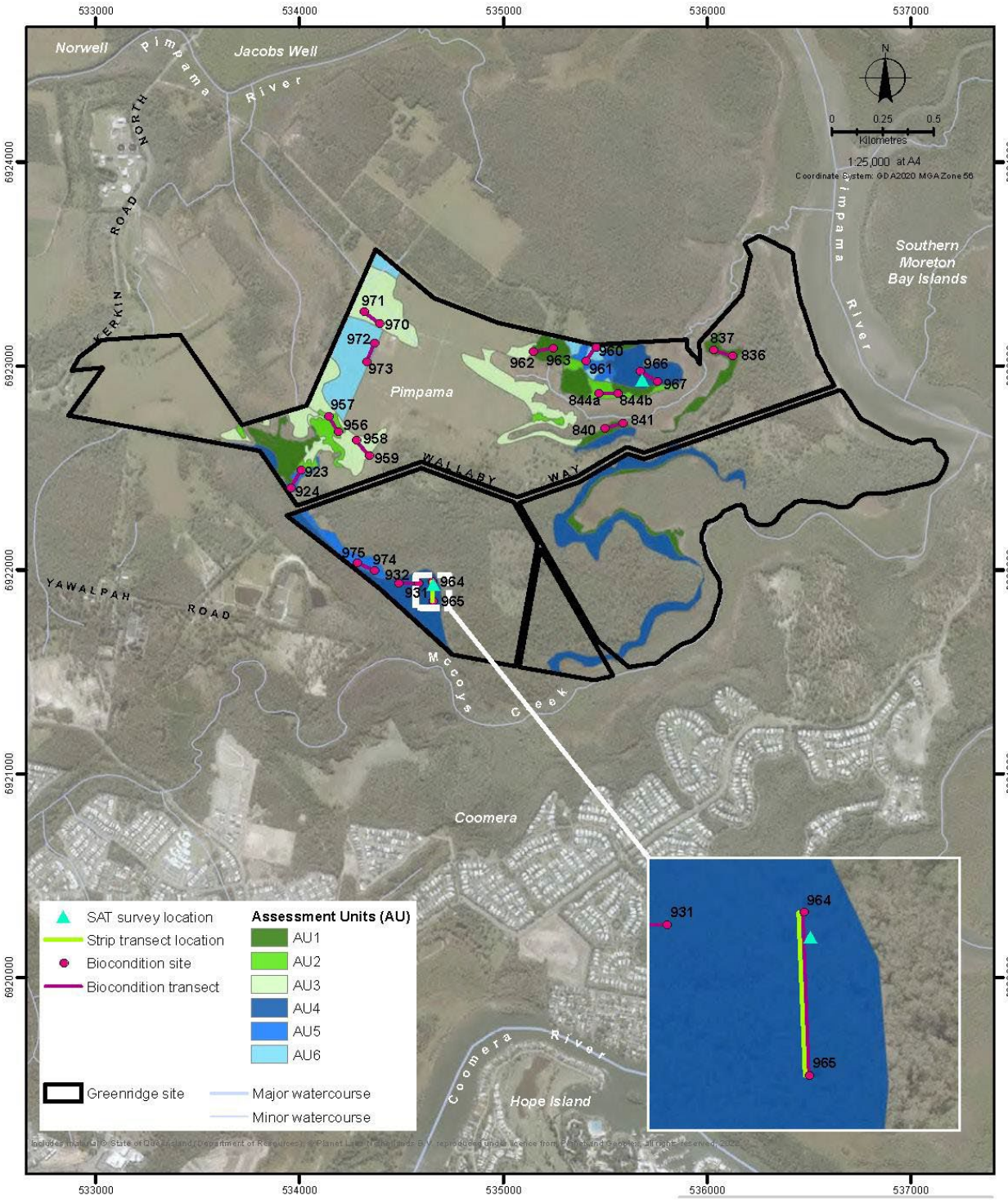
Drawn By: KM Reviewed by: PJ Date: 5/08/2022

Figure:	4.1
Title:	Assessment Units, Quaternary and Habitat Quality survey locations
Project:	Coomera Connector Offsets Project, Tabooba Offset Property Assessment Report
Client:	Queensland Department of Transport and Main Roads

BAAM ECOLOGICAL CONSULTANTS

Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\0101-0306-0010-C (Tabooba_AUs HabQuality Biocond).mxdDate: 7/06/2022 7:46:02 AM

Figure 12: Monitoring sites - Greenridge



Data sources:
Vegetation management regional ecosystem map - v12.00, Published 04/05/2022
Vegetation management watercourse and drainage feature map (1:25000) – South East Queensland v5.0, Published 08/09/2021
Baseline roads and tracks - Queensland, Published 31/03/2022
State of Queensland (Department of Resources) 2022

Figure:	4.1
Title:	AU mapping results and survey locations
Project:	Greenridge Offset Property Assessment Results Coomera Connector Stage 1 – EPBC 2020/8646
Client:	Queensland Department of Transport and Main Roads

Drawn By: KM Reviewed by: PJ Date: 28/09/2022

BAAM ECOLOGICAL CONSULTANTS

Document Location: D:\Projects\BAAM\BAAM 2022-009 Coomera Connector Offsets\Output\01\01-030c-0005-C (Greenridge_AU mapping and survey locations).mxd Date: 28/09/2022 8:23:21 AM

9 Legally binding mechanism

The offsets will be secured by being declared as an area of high conservation value under section 19F of the VM Act. Once this has been registered on the title, the offset areas will be mapped as a category A area on the property map of assessable vegetation (**PMAV**). An area mapped as category A on a PMAV is described as an 'area subject to compliance notices, offsets and voluntary declarations'.

To secure the declared area on the title of each property, the property owners will complete and submit a request for a declared area form, and a declared area management plan form. Both of these forms are requirements of the Queensland Department of Resources so that the legally binding mechanism may be lodged on the title of the property.

The approval holder will legally secure the environmental offset within 12 months of the date of issue of the approval conditions; i.e., the offsets will be legally secured by 17 March 2024. The approved OAMP will be attached to the legal mechanism used to legally secure the environmental offset. The approval holder will provide written evidence to the Department within 20 business days of the mechanism to legally secure the environmental offset having been registered.

Management and monitoring of the offset area will be undertaken in accordance with commitments in the approved OAMP.

The declared area will remain in place as the legally securing mechanism for the offset area. The declared area and approved OAMP will ensure the offset completion criteria are attained, and then maintained for the period of the EPBC Act approval. Statutory protection of the offset area is maintained under the VM Act, NC Act and EPBC Act (or subsequent legislation). This will ensure that the ecological benefits of the offset are maintained in perpetuity.

With respect to the property Tabooba, TMR may enter into an agreement with DES and/or SRRC to have the property established as a nature conservation area and/or be maintained under the Land for Wildlife program respectively. Brief informal discussions have already been had with SRRC's Land for Wildlife Program as to TMR and Council maintaining the property post approval. Decisions on the maintenance of the property would be made closer to the lapsing of the approval.

With respect to the property Greenridge, DES and GCCC have previously expressed interest in acquiring Greenridge. Given the interest by both DES and GCCC, TMR may enter into an agreement with either or both DES and GCCC to maintain the property particularly given its proximity to the Pimpama River Conservation Area. Decisions on the maintenance of the property would be made closer to the lapsing of the approval.

10 Adaptive management and plan review

This OAMP has been prepared to be implemented until the offset completion criteria have been achieved, or when the approval for the action ceases. Management measures will be reported in the Offset Area reports, and adapted, where required, if triggers are reached and corrective actions are implemented (see *Table 12* and *Table 13*). If management measures need substantial adjustment, TMR will review this plan in consultation with the Department.

TMR will notify the Department electronically within 2 business days of becoming aware of any incident and/or potential or actual non-compliance with the conditions or commitments made in this OAMP. The notification will specify the condition or commitment made in a plan which has been or may have been breached; provide a short description of the incident and/or potential non-compliance and/or actual non-compliance; and identify the location (including co-ordinates), date, and time of the incident and/or potential or actual non-compliance.

TMR will provide to the Department the details of any incident or non-compliance with the conditions or commitments made in this OAMP as soon as practical and no later than 2 business days after becoming aware of the incident or non-compliance, specifying:

a) the condition that the approval holder has potentially breached
b) the nature of the non-compliance
c) when and how the approval holder became aware of the non-compliance
d) how the non-compliance will affect the approved action
e) how the non-compliance will affect the anticipated impacts of the approved action, in particular how the non-compliance will affect the impacts on the MNES
f) the measures the approval holder will take to address the impacts of the non-compliance on the MNES and rectify the non-compliance
g) the time by when the approval holder will rectify the non-compliance.

If TMR wishes to carry out any activity otherwise than in accordance with this OAMP, TMR will submit to the Department for the Minister's written approval, a revised version of the OAMP. The varied activity will not commence until the Minister has approved the varied OAMP in writing. If the Minister approves the revised OAMP, that OAMP will be implemented in place of the OAMP originally approved.

If the Minister requests that TMR make specified revisions to the OAMP, TMR will develop and submit the revised OAMP for the Minister's written approval. TMR will implement the revised OAMP. Unless the Minister has approved the revised OAMP, then TMR will continue to implement the OAMP originally approved.

This OAMP will be submitted electronically to the Department, and will be published on TMR’s website within 15 business days of the Minister approving the OAMP in writing. The OAMP will remain on TMR’s website until the expiry date of the approval (17 March 2053).

11 Conclusion

This OAMP has been prepared to address all the requirements of the EPBC Act. This OAMP will be published on TMRs website within 1 month of the OAMP being approved by the Minister. The OAMP will remain on the website and accessible to the public for the duration of the EPBC Act approval.

The offset sites will successfully deliver offsets for the Project’s residual significant impacts to Coastal Swamp Oak TEC, habitat for the Koala and GHFF.

This offset for the action will be implemented consistent with the EPBC Act *Environmental Offset Policy* and the approval conditions for the action. The approval holder commits to the implementation of this OAMP until the expiry of the EPBC approval (17 March 2053).

The approval holder also commits to registering a legally binding conservation mechanism to provide long-term protection to the offset area within 12 months of the date of the EPBC approval (i.e., by 17 March 2024), and to providing DCCEEW with written evidence demonstrating that the offset areas at Tabooba and Greenridge have been legally secured within 20 business days after the offsets have been legally secured.

List of abbreviations

Abbreviation	Description
ASL	above sea level
AU	Assessment unit
BAAM	Biodiversity Assessment and Management Pty Ltd
DAWE	Department of Agriculture, Water and the Environment (former)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DES	Department of Environment and Science (Queensland)
DEWHA	Department of the Environment, Water, Heritage and the Arts (Australian) (former)
DMY	Dry matter yield
DoE	Department of Environment (Australian) (former)
DoEE	Department of the Environment and Energy (Australian) (former)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (Australian) (former)
EDL	Ecologically Dominant Layer
EOP	Environmental Offsets Policy (October 2012) (EPBC Act)
EPBC Act	*Environment Protection & Biodiversity Conservation Act 1999* (Cth)
EVNT	Endangered, vulnerable or near threatened (species)
GCCC	Gold Coast City Council
GHFF	Grey-headed Flying-fox
ha	hectares
HQS	Habitat quality scoring
HVR	High-value regrowth
km	kilometres
LGA	local government area
m	metres
MNES	Matters of national environmental significance
NC Act	*Nature Conservation Act 1992* (Qld)
OAG	Offset Assessment Guide (DCCEEW)
OAMP	Offset Management Plan
OS	Offset strategy
PER	Public Environment Report
PMAV	Property map of assessable vegetation
PRCA	Pimpama River Conservation Area
Project	Coomera Connector Project
RE	Regional ecosystem
SAT	Spot assessment technique (koala surveys)
SRRC	Scenic Rim Regional Council
TEC	Threatened ecological community
THQ	Terrestrial habitat quality
TMR	Queensland Department of Transport and Main Roads
VM Act	*Vegetation Management Act 1999* (Qld)

Glossary

Term	Definition
Approval holder	The person to whom an EPBC Act approval is granted
Approved conservation advice/s	A conservation advice approved by the Minister under section 266B(2) of the EPBC Act.
Business day	A day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.
Category A vegetation	Under Queensland vegetation management legislation, Category A vegetation is an area which is: • a declared area • an offset area, an exchange area, an area that has been subject to unlawful clearing or an enforcement notice, an area subject to clearing as a result of a clearing offence • an area that the chief executive determines to be Category A. Category A areas are colour-coded red on the regulated vegetation management map. See *Vegetation Management Act 1999* (Qld), s20AL.
Category X vegetation	Under Queensland vegetation management legislation, all areas other than Category A, B, C and R areas are Category X areas. Some Category X areas are also identified on a PMAV as 'locked in'. Category X areas are also known as 'exempt areas' because activity in Category X areas is not regulated by the *Vegetation Management Act 1999*. Category X areas are colour-coded white on the regulated vegetation management map (see *Vegetation Management Act 1999* (Qld) s20A.).
Compliance records	All documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession, or that are within the approval holder's power to obtain lawfully.
Compliance report/s	A written report of compliance with, and fulfilment of, the conditions attached to the approval.
Department	The Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*.
Habitat quality scores	A score out of ten, based on BioCondition assessment plus an assessment of 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.
Koala habitat	Areas of vegetation containing tree species known to be utilised for food or shelter.
Minister	The Minister administering the *Environment Protection and Biodiversity Conservation Act 1999*, including any delegate thereof.
Offset calculator	The *Offset Assessment Guide* spreadsheet tool as provided by DAWE
Plan/s	Any of the documents required to be submitted to the Department, implemented by the approval holder and/or published on its website in accordance with the approval conditions.

Term	Definition
Property map of assessable vegetation	A map certified by the chief-executive as a PMAV for an area and showing the vegetation category areas for the area (e.g. Category C area, Category X area) See *Vegetation Management Act 1999* (Qld), section 20AK.
Regional ecosystem	Regional ecosystems are vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil (Sattler and Williams 1999, *Vegetation Management Act 1999*).
Regrowth vegetation	Vegetation that is not remnant vegetation.
Regulated vegetation	Vegetation that: • is an endangered regional ecosystem, an of concern regional ecosystem, or a least concern regional ecosystem, and • forms the predominant canopy of the vegetation covering more than 50% of the undisturbed predominant capacity; averaging more than 70% of the vegetation's undisturbed height; and • composed of species characteristic of the vegetation's undisturbed predominant canopy.
Riparian zone	The area within a minimum of 100 metres of the defining bank of any watercourse (as defined under the Queensland *Water Act 2000*).
Site habitat quality	A score on a scale of 0 to 10 representing a site's utility for each listed threatened species, where zero ('0') represents a site of no value to the species, and '10' represents ideal habitat. Unless agreed otherwise by the Department, site quality must be comprised of 3 points for site condition, 3 points for site context, and 4 points for species stocking rate. These scores must be derived in accordance with the Queensland *Guide to determining terrestrial habitat quality: A toolkit for assessing land-based offsets under the Queensland Environmental Offsets Policy* (Version 1.3, 2020), or subsequent published revision.
Site specific assessment/s	A baseline investigation which explains the scientific basis on which the description and location of impact/s and associated users, performance indicators, trigger values and limits have been derived, or not derived.
Suitably qualified ecologist	An individual with tertiary qualifications and/or a minimum of three years demonstrated experience relevant to the task in question and have expertise in the ecology of koalas.
Suitably qualified person	A person who has professional qualifications, training, skills and/or experience related to the nominated subject matter and can give authoritative independent assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods and/or literature.
Website	A set of related web pages located under a single domain name attributed to the approval holder and available to the public.

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Appendix A: Field survey methodology

Tabooba – vegetation surveys

To assess the suitability of Tabooba for Koala and GHFF offsets, habitat assessment and BioCondition surveys were undertaken in May 2022 to compare with the habitat quality identified in the action corridor. This applied the methods of the *Guide to Determining Terrestrial Habitat Quality – Version 1.3* (Queensland Government 2020) in line with the habitat assessments undertaken in the action corridor for Koala (Planit 2021a) and GHFF (Planit 2021b), as well as per the *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland* (Eyre et al., 2015); and *Method for the establishment and survey of reference sites for BioCondition*, Version 2.0 (Eyre, et al. 2011) using the most recent Queensland Herbarium Biocondition Benchmarks.

Additional assessment has been undertaken for Koala and GHFF as described below, and the results have been applied in accordance with *How to use the offsets assessment guide* (DSEWPaC, 2012), taking into account site condition, site context and species stocking rate to contribute to the calculation of habitat quality using the EPBC Act Offsets assessment guide.

The site vegetation mapping was ground-truthed, compared to satellite imagery and then adjusted accordingly (refer to BAAM 2022, Figure 5.6). Due to the different ages of regrowth on the property, regrowth vegetation was divided into the following categories:

- Advanced Regrowth: areas supporting a continuous canopy in aerial imagery that was indistinguishable from areas mapped as remnant; and
- Young Regrowth: areas supporting a broken canopy with scattered taller trees, but generally dominated by scattered smaller trees as evident in satellite imagery.

This information was also used to determine the number of transects in each assessment unit (AU; which is the vegetation type and condition) to fulfill the recommendations provided in the BioCondition Framework. This was achieved on 4 of the vegetation classifications; however, significantly wet weather conditions and terrain challenges prevented an additional survey being undertaken on two classifications.

The AUs are described as:

AU1 REMNANT RE 12.8.16: 49.831 ha. Remnant *Eucalyptus crebra, E tereticornis +/- Angophora subvelutina* open forest.

AU2 ADVANCED REGROWTH RE 12.8.16: 144.823 ha. Advanced regrowth of open forest dominated by *Eucalyptus tereticornis subsp. basaltica, E. crebra +/- Corymbia tessellaris, C. intermedia*. Occasional relictual trees present.

AU3 YOUNG REGROWTH RE 12.8.16: 48.105 ha. Young regrowth open forest with occasional emergent relictual trees. Dominant species include *Eucalyptus crebra, E. tereticornis* and *Corymbia tessellaris*.

AU4 REMNANT RE 12.8.14: 50.666 ha. Remnant open forest dominated by *Eucalyptus melliodora*, *E. tereticornis* subsp. *basaltica*, *E. eugeniodes, Angophora subvelutina* and *Corymbia intermedia*.

AU5 ADVANCED REGROWTH RE 12.8.14: 19.815 ha. Advanced regrowth of *Eucalyptus eugeniodes, E. tereticornis* subsp. *basaltica, E. melanophloia* open forest.

CLEARED PADDOCK FORMERLY OF RE 12.8.16: 76.925 ha. Cleared paddocks with lone trees. Queensland Herbarium Pre-clear RE mapping indicates it would have supported RE 12.8.16.

Tabooba – fauna surveys

Koala were surveyed at Tabooba in both March and May 2022 by Spot Assessment Technique (**SAT**) (as per Phillips and Callaghan, 2011) to determine localised levels of habitat use by koala, and thermal-imaging drone surveys to gather baseline Koala density data in areas that were difficult and/or impossible to survey by foot.

Koala SAT surveys, including searching for individuals in trees and scats within 1m of the base of suitable forage trees, were undertaken in accessible locations on the property on 17 March 2022 and 6-7 May 2022. The nine SAT surveys encompassed 279 koala food trees of *Angophora leiocarpa, Eucalyptus crebra, E. tereticornis, E. melliodora, Lophostemon confertus, Corymbia intermedia* and *C. tessellaris*. These surveys were undertaken predominantly within advanced and young regrowth vegetation, as remnant vegetation on the steeper slopes was relatively inaccessible due to very wet conditions and with dense lantana and/or too steep to survey safely. There was only one site where a SAT survey could be undertaken in riparian vegetation as the channel was relatively shallow and erosion had reduced the amount of weed cover.

Conditions for observing scats were not ideal due to a prolonged wet season, resulting in scats being washed away on steep slopes and riparian areas, degrading quickly in warm and wet conditions, or being lost in the dense grass and/or weed cover. Additionally, weather and terrain challenges prevented access to areas where Koala were identified in the drone surveys.

No surveys targeting GHFF were conducted at Tabooba as there were no flowering events at the time of surveys. However, the property is dominated by preferred forage species of GHFF, including the winter-flowering *Eucalyptus tereticornis* and *E. crebra*, which are critical resources for the species (*National Recovery Plan for the Grey-headed Flying-fox* Pteropus poliocephalus DAWE, 2021).

Both REs present on Tabooba rank as high-moderate value foraging habitat for GHFF. The Recovery Plan describes vegetation communities containing (amongst other species) *Eucalyptus crebra, E. tereticornis* and *E. melliodora* as important resources for grey-headed flying-fox on coastal lowlands of Southern Queensland as they flower reliably over the winter and spring period. While the property is not located within the coastal lowlands of southern Queensland, Eby and Law (2008) state that productive areas for winter flowering are concentrated in South East Queensland and northern New South Wales where flowering occurs in small remnants in coastal floodplains, coastal dunes and inland slopes, and during spring the extent of productive habitat increases in northern regions, expanding from the coastal lowlands into the coastal ranges and valleys.

The presence of critical forage species and distance to a nationally important GHFF camp (within 20 km) indicates Tabooba supports habitat critical to the survival of GHFF.

Greenridge – vegetation surveys

Field surveys were undertaken at Greenridge to assess its suitability for use as an offset for Coastal Swamp Oak TEC, Koala and GHFF. In accordance with the methods of the *Guide to Determining Terrestrial Habitat Quality – Version 1.3* (the guide) Greenridge was mapped into like AUs, differentiated based on:

- RE type; and

- Vegetation condition (remnant, advanced regrowth, young regrowth or cleared).

Ground-truthing of a number of polygons of the RE types supporting *Casuarina glauca* was undertaken through applying the quaternary survey method of Neldner et al. (2017). Field observations and the use of historical aerial photography contributed to delineation of the regrowth vegetation.

The AUs are described as:

AU1 REMNANT RE 12.1.1: 14.2 ha. Remnant *Casuarina glauca* open forest. Wholly analogous with the coastal swamp oak TEC.

AU2 REGROWTH RE 12.1.1: 5.16 ha. Regrowth *Casuarina glauca* open forest.

AU3 NON-REMNANT RE 12.1.1: 22.03 ha. Non-remnant *Casuarina glauca* open forest (presently grassland).

AU4 REMNANT RE 12.3.20: 12.9 ha. Remnant *Casuarina glauca*, *Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest. Where dominated by *Casuarina glauca* the community is analogous with the Coastal Swamp Oak TEC.

AU5 REGROWTH RE 12.3.20: 4.77 ha. Regrowth *Casuarina glauca, Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest.

AU6 NON-REMNANT RE1 2.3.20: 11.88 ha. Non-remnant *Casuarina glauca, Eucalyptus tereticornis* and *Melaleuca quinquenervia* open forest (presently grassland).

Additional data were collected during field surveys to inform habitat quality scoring parameters for MNES not captured using the standard BioCondition method. These included the following based on the relevant MNES:

1. *Casuarina glauca* canopy cover

    Using the same method described below for Koala tree canopy cover, the proportion of *Casuarina glauca* cover for some transects was also recorded to assist in identifying patches of Coastal Swamp Oak that would qualify as the TEC.

2. Koala tree canopy cover

    When assessing the quality of food and foraging habitat for koala using the scoring method applied in the Impact Area Assessment prepared by Planit (2021a), it was necessary to record the proportion of canopy cover comprised of Koala food tree species known to support koalas within the region. Gold Coast City Council identify the following species as diet species for Koala in the region:

    Preferred Koala food trees:

    - forest red gum or Queensland blue gum (*Eucalyptus tereticornis*)
    - tallowwood (*E. microcorys*)
    - swamp mahogany (*E. robusta*)
    - grey gums (*E. propinqua* and *E. biturbinata*).

    Important local supplementary food sources:

    - narrow-leaved red gum (*E. seeana*)
    - white stringybark (*E. tindaliae*)
    - red mahogany (*E. resinifera*)
    - brush box (*Lophostemon confertus*)

- broad-leaved paperbark (*Melaleuca quinquenervia*).

The City of Gold Coast Koala Conservation Plan states that many other species are known to be utilised by Koala. An in-situ monitoring program at East Coomera during 2007-2014 identified Koalas using more than 40 tree species including those of the genera *Eucalyptus, Corymbia, Melaleuca, Lophostemon* and *Angophora*; however, it is unclear which species, if any, are utilised solely for shelter as opposed to constituting diet (Gold Coast City Council 2018). Based on the REs recorded on Greenridge that are known to provide suitable habitat for koalas and are dominated by recognised Koala food trees, species from any of the above genera were counted as potential Koala food trees for the purposes of this assessment.

Standard BioCondition surveys record canopy cover by measuring the vertical projection of canopy intercepting a 100m transect line (Eyre et al. 2015). To capture the proportion of the canopy comprised of Koala food trees, these species were distinguished separately from other canopy species when recording canopy cover over the 100m transect. Distances of the Koala tree canopies over the 100m transect were summed and then calculated as a proportion of the total canopy cover (koala tree cover plus non-Koala tree cover, less any overlaps).

Greenridge – fauna surveys

Transects in general accordance with Dique et al. (2003) were undertaken to measure localised levels of habitat use by Koalas to gather baseline Koala density data (refer to the full report from the surveys as provided at Appendix 3 of BAAM 2022).

Seven SAT surveys and eight Strip Transect surveys were carried out on Greenridge on 30 June, 1 July, 27 July and 3 August 2022. The results of two of each survey type, undertaken on 27 July and 3 August (at locations shown on Figure 6.8 of BAAM 2022), were reported as these were the only sites relevant to a action Koala offset AU4 (remnant RE 12.3.20). An additional SAT survey was carried out in the eastern portion of Greenridge in State-mapped RE 12.3.20; however, the mapped RE 12.3.20 at this location was subsequently determined to represent a heterogenous polygon comprised of three separate REs (including 12.3.20) and the survey results at that location were therefore not considered representative of a homogenous polygon of remnant RE 12.3.20.

No Koala scats were recorded from the three SAT surveys undertaken within AU4 and no Koalas were recorded from the three Strip Transects undertaken within AU4.

No flying-fox camps were recorded on site, and none have been known from Greenridge previously. GHFF surveys were not undertaken on Greenridge as the REs present are known to be of high value to the species. Greenridge is within 20 km of 20 flying-fox camps used by GHFF and the species has been recorded from Greenridge previously, foraging on *Melaleuca quinquenervia* and *Eucalyptus tereticornis* (ddwfauna 2006). During koala surveys in 2022, the EVE Koala survey team noted heavy flying-fox use of flowering eucalypts on site (pers comm. Deidre de Villiers). GHFF is expected to forage on site regularly during *Eucalyptus* and *Melaleuca* flowering events.

Appendix B: Pest animal control Standard Operating Procedures

There are a number of Standard Operating Procedures (SOPs) relating to the control of pest animals, across several state jurisdictions. The SOPs produced by NSW Department of Primary Industries are the most up-to-date and comprehensive at the time of writing this OAMP. Pest animal control actions will be cognisant of the requirements of the *Biosecurity Act 2014* (Qld). Pest animal control actions carried out under this plan must be consistent with the relevant SOP below.

Feral pigs

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0005/1396787/NSWPIG-SOP6-Poisoning-of-feral-pigs-using-HOGGONE-meSN-sodium-nitrite-baits.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1396791/NSWPIG-SOP4-Poisoning-of-feral-pigs-with-sodium-monofluoroacetate-1080.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1396791/NSWPIG-SOP4-Poisoning-of-feral-pigs-with-sodium-monofluoroacetate-1080.PDF

Foxes

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/1396777/NSWFOX-SOP1-Ground-baiting-of-foxes-with-sodium-monoflouroacetate-1080.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1396773/NSWFOX-SOP5-Trapping-of-foxes-using-padded-foot-hold-traps.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0012/1396776/NSWFOX-SOP8-Candid-Pest-Ejectors-CPEs-using-sodium-monoflouroacetate-1080-or-para-aminopropiophenone-PAPP.PDF

Wild dogs

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0009/1396764/NSWDOG-SOP4-Ground-baiting-of-wild-dogs-with-sodium-monofluoroacetate-1080.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0004/1396768/NSWDOG-SOP1-Trapping-of-wild-dogs-using-padded-foot-hold-traps.PDF

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0012/1396767/NSWDOG-SOP7-Canid-pest-ejectors-CPEs-using-sodium-monofluoroacetate-1080-or-para-aminopropiophenone-PAPP.PDF

Feral deer

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/1396761/NSWDEER-SOP1-Ground-shooting-of-feral-deer.PDF

Cats

https://pestsmart.org.au/?s=cats

Euthanasia in the field

https://pestsmart.org.au/pest-animals/general-methods-of-euthanasia-in-field-conditions/

Appendix C: Coastal swamp oak TEC revegetation plan

Timeline/Stage	Action	Rationale
1.0 Delineation of offset areas in pasturelands *Aim: To define the land zones of the pasturelands, to determine suitable areas for re-establishing either RE 12.1.1 or RE 12.3.20. This is currently not possible due to site conditions and subsequent challenges, in particularly the dense exotic grass cover.*	1.1 Burn exotic grass pasturelands using the QPWS Planned Burn Guidelines (SEQ Bioregion)	Burning will reduce the above ground structure to allow for accurate aerial LiDAR imagery. This is to ascertain the current distribution of land zone 1 and 3 in the pasturelands, which are required to determine suitable RE revegetation. Burning will consider current *Casuarina glauca* regrowth along the drainage lines of the exotic pasturelands, as well as other fire sensitive species (e.g. mangroves), with fire breaks incorporated accordingly.
	1.2 Capture LiDAR imagery of pasturelands	Following burning of the target areas, these will be subject to aerial LiDAR survey.
	1.3 Digital Terrain Modelling (DTM)	Using LiDAR imagery, develop a Digital Terrain Model (DTM) of the pasturelands to identify areas of lowlands (land zone 1), and alluvial plains (land zone 3). Hydrological modelling will be undertaken to ensure there is no risk of revegetated areas being impacted by changes in water levels or water salinity should the current (off site) tidal gate be removed in the future, either anthropogenically or by natural disaster/degradation.
	1.4 Soil testing post burn)	Undertake soil testing throughout the pasturelands to determine soil conditions: pH, electrical conductivity (EC), available Bray phosphorus, Emerson Aggregate Test, organic carbon, plant available water-holding capacity (PAWC), hydraulic conductivity (Ksat), and particle size distribution. Consideration may need to be given to testing for macro and microelements, heavy metals, and persistent organochloride pesticides (Dieldrin). This will provide information on recent and current water parameters, as well as for planning suitable revegetation. In particular, some species in Regional Ecosystem (RE) 12.3.20 are less tolerant to salt and may require amelioration measures prior to rehabilitation.
	1.5 Risk assessment	Based on the soil testing and DTM, undertake a risk assessment using the LiDAR, hydrological and soil testing data to determine areas of the pasturelands that are suitable for establishment of RE 12.1.1 and RE 12.3.20. Note, minimum areas for offsetting requirements are: Coastal Swamp Oak Threatened Ecological Community Offset – represented by RE 12.1.1 • Sensitive ecological data Koala Offset - RE 12.3.20 • Sensitive ecological data
2.0 Site preparation *Aim: To prepare site for revegetation activities*	2.1 Spray with suitable herbicide	Following burning of the subject pasturelands, emerging and unburnt weeds will be sprayed with an appropriate herbicide. Herbicides must be registered by the Australian Pesticides and Veterinary Medicine Authority for use within proximity to waterways, be used in strict accordance with the product label directions and applied by an appropriately qualified person in accordance with the *Agricultural Chemicals Distribution Control Act 1996*.
	2.2 Follow-up burn	Once any emerging or remaining weeds have died following herbicide application, a second burn will be carried out with the same consideration for fire-sensitive species as described in **Section 1.0**.
	2.3 Amelioration	Should soil testing indicate soil amelioration is required, this will be undertaken post-burn and prior to seeding and/or planting preparation.
	2.4 Row preparation	Following the second burn, rows will be prepared for planting the canopy trees (Stage 1 planting). Rows will be 3 m apart to allow for subsequent management of re-emerging exotic grasses through mechanical slashing or by hand if conditions are not suitable for machinery.

Timeline/Stage	Action	Rationale
3.0 Revegetation *Aim: To reinstate RE 12.1.1 and 12.3.20 to achieve offset requirements. This will be undertaken in two stages:* *1) establish canopy cover, and* *2) establish midstory and ground cover species.*	3.1 Species selection for RE 12.1.1: • Canopy – *Casuarina glauca* • Mid-storey – *C. glauca* • Ground cover – *Sporobolus virginicus, Imperata cylindrica, Cyperus polystachyos, Juncus usitatus.*	Species have been selected considering both the technical description for RE 12.1.1, as well as the native species detected on site during field surveys. The latter are particularly relevant as these species are able to persist in the current conditions of the site. While *Eucalyptus tereticornis* is also described as an emergent species in the state government technical descriptions, this species has been omitted due to the potential water inundation in the lowland areas that are designated for revegetation with RE 12.1.1. Stocking density and general habitat requirements are described in **Attachment 1**. The final restoration target density is also provided, with the planting density to be determined at the time of planting based on environmental and climatic considerations, as well as the form of plantings (tubestock vs seeding). In particular, increased planting density (compared to target density) is required to account for establishment or sapling mortality; however, each site needs to consider mortality factors such as current weather conditions (e.g. drought), capacity/requirement to provide on-going watering, weed management and pest management. Additionally, overplanting is required to facilitate rapid canopy closure to enable Stage 2 planting of the ground cover between years 2 and 3. Should stem density be too high by Stage 2 (2-3 years after initial planting), these can be manually thinned prior to planting of the understory, which will also provide valuable course woody debris to the ecosystem. Tree guards may need to be considered if herbivory by pest animals (e.g. European hare) and natives (e.g. kangaroo species) occur on newly planted tubestock. Pigs and corresponding damage to *C. glauca* roots currently exist on site; further control of feral animals is described in the OAMP.
	3.2 Species selection for RE 12.3.20: • Canopy – *Casuarina glauca, Eucalyptus tereticornis, Melaleuca quinquenervia* • Mid-story – *C. glauca, Alphitonia excelsa, Melaleuca salicina* • Ground cover – *Sporobolus virginicus, Dianella brevipedunculata, Imperata cylindrica, Juncus kraussii.*	Species have been selected considering both the technical description for RE 12.3.20 (previously RE 12.3.5a), as well as the native species detected on site during field surveys. The latter is particularly relevant, as these species are able to persist in the current conditions of the site. Stocking density and general habitat requirements are described in **Attachment 1**. The final restoration target density is also provided, with the planting density to be determined at the time of planting based on environmental and climatic considerations, as well as the form of plantings (tubestock vs seeding). In particular, increased planting density (compared to target density) is required to account for establishment or sapling mortality; however, each site needs to consider mortality factors such as current weather conditions (e.g. drought), capacity/requirement to provide on-going watering, weed management and pest management. Additionally, overplanting is required to facilitate rapid canopy closure to enable Stage 2 planting of the ground cover between years 2 and 3. Should stem density be too high by Stage 2 (2-3 years after initial planting), these can be manually thinned prior to planting of the understory, which will also provide valuable course woody debris to the ecosystem. Tree guards may need to be considered if herbivory by native or pest animals (e.g. Grey Kangaroo, European hare) is expected on tree species.
	3.3 Planting	Planting is to be undertaken in two stages: 1) tree canopy species, and 2) midstory and ground cover species. Planting is to be carried out at the beginning of the growing season (September-October) to allow maximum growing time prior to extreme temperatures (summer heat and winter frost). Planting should be undertaken in the morning or late afternoon to avoid heat/desiccation stress. Stage 1 is aimed at establishing the canopy cover, with trees planted in the prepared rows at a distance of ~1.7-2.2 m (to equal ~1,500 -2,000 stems/ha) between trees of the same row. All canopy plants will be planted at tubestock pot size and be sun-hardened prior to planting. A risk assessment of weed emergence should be undertaken at the time of planting to determine whether tree mulch rings (e.g. made from coir or other biodegradable products) or loose mulch along rows are required to minimise weed growth and competition. Stage 2 planting (after canopy cover reaches 80% cover; estimated 2-3 years after initial planting) consists of the midstory and ground cover species. These species are likely to be outcompeted by exotic grasses/weeds if planted during Stage 1. However, many of these exotic species are not adapted to shade, and therefore will have less competitive influence when the canopy is near closure. Midstory species and Salt Couch (*Sporobolus virginicus*; reproduces primarily by stolons) will be planted at tubestock pot size and be sun-hardened prior to planting. Other grasses or sedges may be able to be direct seeded in lightly ripped soil. Seeding at a rate of 20 kg per ha can be considered as an alternative to tubestock planting in smaller revegetation areas in Stage 2. Tree guards may need to be considered if herbivory by native or pest animals is expected.
	3.4 Watering regime	All plants must be watered in their pots prior to planting, as well as after placement in the soil. Watering must be with low pressure water stream only. Further watering will be subject to weather conditions and planting season (more watering required during dry weather). Plant health and soil moisture levels must be assessed by site inspection at least weekly in the first month after planting, to determine a suitable water schedule.

Timeline/Stage	Action	Rationale
4.0 Monitoring and management *Aim: To monitor revegetation areas to guide short- and long-term management activities*	4.1 Monitor revegetation areas to guide management actions	Monitoring will include: • Weed species present and spatial spread (to guide weed control requirements) • Pest species present and indicative damage to stock and/or ground area (to guide pest control requirements, as per the OAMP) • Revegetation health (to provide information on whether additional water or revegetation requirements are needed) • Presence and extent of erosion (to provide information for additional site stability works, if required) Monitoring timeframe from initial planting: • Year 1: 1 month, 3 months, 6 months, 9 months, 12 months • Year 2: 3-month intervals (i.e. 15 months from initial planting, then 18 months, 21 months, 24 months) • Year 3: 6-month intervals (i.e. 30 months from initial planting, then 36 months)
	4.2 Weed management	Weed management will be one of the key ongoing management requirements for the revegetation areas. Weeds detected on site during field surveys in 2022, and recommended methods for control, are provided in **Attachment 2**. Further weed species may become apparent during monitoring events. For dense, exotic grasses, mechanical slashing (when possible), manual brush-cutting and spot-spraying of suitable herbicide may be required. Herbicides must be registered by the Australian Pesticides and Veterinary Medicine Authority for use within proximity to waterways, be used in strict accordance with the product label directions and applied by an appropriately qualified person in accordance with the *Agricultural Chemicals Distribution Control Act 1996*. Note, pre-emergent herbicides are not known to be safe for use near waterways and are therefore not recommended.
	4.3 Pest management details are provided in the OAMP due to the need to control pest animals at the site level	Pests that are known to occur at Greenridge and require monitoring and management include: • Feral pigs (*Sus scrofa*), which are particularly problematic for *Casuarina glauca* (as they specifically target the root nodules of this species) and vegetation establishment in general; and • Red imported fire ants (*Solenopsis invicta*), which will increase initially without management due to favoured habitat being created from the burning and grass clearing of revegetation areas.
	4.4 Fire management: • Fire management to be undertaken in accordance with QLD Government Planned Burn Guidelines (SEQ Bioregion) • Fire breaks around revegetation areas are described in the OAMP • Fuel loads within the revegetation areas should be assessed during monitoring events, with fuel reduction burns only undertaken when necessary due to the sensitivity of *Casuarina glauca* to fire and the regenerative condition of the revegetation areas	Due to the revegetation areas being in a recovery phase, they may be more sensitive to fire disturbance than the recommendations provided in the RE descriptions below. As such, careful consideration should be given to whether the below recommendations are suitable at any given time. Additionally, as RE descriptions may be updated when new information is available, the fire requirements for each RE should be revisited regularly. The recommended fire requirements for RE 12.1.1 are to have a low to moderate intensity burn in early winter or during the storm burning season, at an interval of 6-7 years minimum. Approximately 25-50% minimum should be retained as unburnt per any given year. Active fire management is required to reduce dry fuel layers. However, the fire ecology for this RE is poorly known and monitoring of the impact and recovery is recommended. Note a seven-year minimum fire interval is required for obligate seeding Allocasuarina and Casuarina success in this RE. For 12.3.20, the recommended fire requirements include late summer to mid-winter (after rain) burns, at intervals of 6-20 years for mixed grass/shrub combination vegetation found on site. Management burns of 25-70% burn mosaic per any given event is the recommended guideline for this RE.
	4.5 Monitoring revegetation for progress to offset targets at two-year intervals	Monitoring transects will be established at the time of first planting, and permanently identified by both GPS and survey markers (e.g. star picket with yellow caps at centre and end points) to ensure consistent monitoring and photo locations over time. Monitoring will follow the BioCondition survey process that was used during offset determination to ensure consistent data collection, assessment, and reporting. In addition to data, this includes standardised photos of each plot locations (see Attachment 4 of the *BioCondition Assessment Manual*). An adaptive management approach (**Attachment 3**) will be undertaken following each offset monitoring, whereby management and revegetation activities are modified if necessary to ensure the revegetation areas are progressing towards the intended target. For example, replacement plantings, manual thinning, etc.

Species list and relevant details for the 12.1.1 revegetation areas. Note, the first column details the minimum number of species for offset requirements and the final restoration target density (based on RE Technical Descriptions). Priority status was determined based on presence and abundance at Greenridge, and dominance within the RE/TEC.

Strata and RE Requirements	Botanical Name	Common Name	Planting Stage	Habitat Preference	Presence at Greenridge	Priority of Species in Revegetation	Form Availability*
Canopy species Min. 1 species Stem density: 500/ha	*Casuarina glauca*	Swamp Sheoak	1	Moist; high salt tolerance	Very common	Essential	Seed; Tube
Midstory species Min. 1 species Stem density: 180/ha	*Casuarina glauca*	Swamp Sheoak	1	Moist; high salt tolerance	Very common	Essential	Seed; Tube
Ground Cover (Grasses) Min. 2 species Stem density: nd	*Sporobolus virginicus*	Salt Couch	2	Moist; high salt tolerance	Very common	High priority grass	Tube
	Imperata cylindrica	Blady Grass	2	Moist	Uncommon	Priority grass	Seed; Tube
	Enteropogon acicularis	Curly Windmill Grass	2	Drought and flood tolerant	Common	Potential grass replacement	Seed
	Paspalidium distans	Shotgrass	2	-	Common	Potential grass replacement	Seed
Ground Cover (Forbs/Sedges) Min. 3 species Stem density: nd	*Juncus usitatus*	Common Rush	2	Moist; moderate salt tolerance	Common	Priority sedge	Seed; Tube
	Cyperus polystachyos	Bunchy Sedge	2	Moist; moderate salt tolerance	Common	Priority sedge	Seed; Tube
	Fimbristylis ferruginea	Fringe Rush	2	Moisture tolerance	Common	Priority sedge	Tube
	Einadia nutans	Nodding Saltbush	2	Moist; high salt tolerance	Uncommon	Potential forb replacement	Seed; Tube
	Gahnia clarkei	Tall Saw Sedge	2	Moist; moderate salt tolerance	Uncommon	Potential sedge replacement	Seed; Tube

*Availability at time of writing RMP; see stockists closer to planting date to confirm availability and form (seed or tubestock)
nd Not detailed in the RE Technical Description

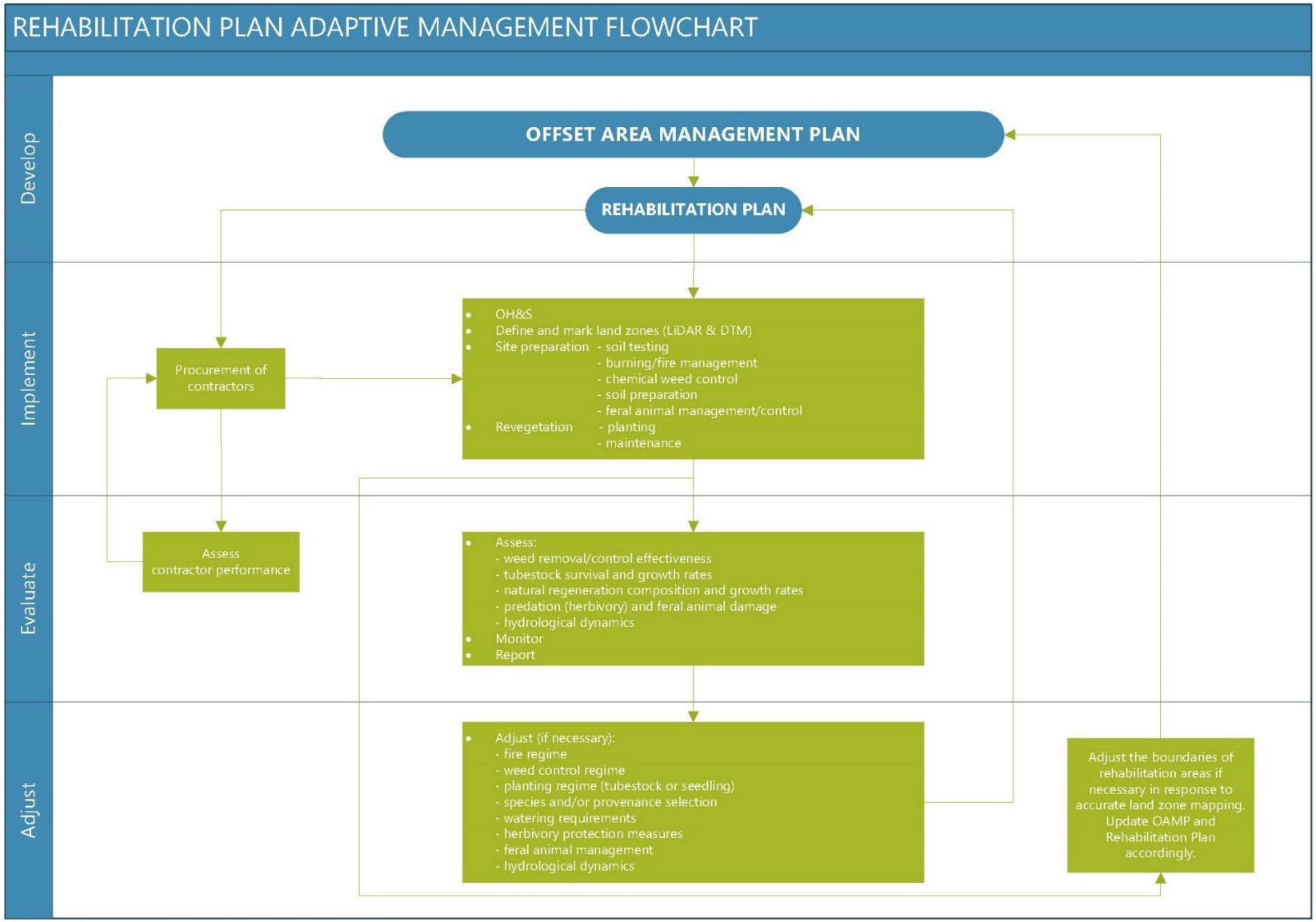
Species list and relevant details for the 12.3.20 revegetation areas. Note, the first column details the minimum number of species for offset requirements and the final restoration target density (based on RE Technical Descriptions). Priority status was determined based on presence and abundance at Greenridge, and dominance within the RE/TEC.

Strata and RE Requirements	Botanical Name	Common Name	Planting Stage	Habitat Preference	Presence at Greenridge	Priority of Species in Revegetation	Form Availability*
Canopy species Min. 4 species Stem density: 1498/ha	*Casuarina glauca*	Swamp Sheoak	1	Moist; high salt tolerance	Very common	Essential	Seed; Tube
	Melaleuca quinquenervia	Broad-leaved Paperbark	1	High moisture tolerance	Very common	Essential	Seed; Tube
	Corymbia intermedia	Pink Bloodwood	1	-	Uncommon	Priority	Seed; Tube
	Eucalyptus tereticornis	Queensland Blue Gum	1	-	Common	Priority	Seed; Tube
Midstory species Min. 4 species Stem density: 2560/ha	*Alphitonia excelsa*	Red Ash	1	-	Common	Priority	Seed; Tube
	Casuarina glauca	Swamp Sheoak	1	Moist; high salt tolerance	Very common	Priority	Seed; Tube
	Melaleuca salicina	Willow Bottlebrush	1	Moisture tolerance	Common	Priority	Seed; Tube
	Myrsine variabilis	Muttonwood	1	-	Common	Priority	Tube
	Cupaniopsis anacardioides	Tuckeroo	1	-	Common	Priority	Seed; Tube
Ground Cover (Grasses) Min. 2 species Stem density: 500/ha (both Grasses and Forbs)	*Imperata cylindrica*	Blady Grass	2	-	Very common	High priority grass	Seed; Tube
	Paspalidium distans	Shotgrass	2	-	Common	Priority grass	Seed
	Sporobolus virginicus	Salt Couch	2	Moist; high salt tolerance	Uncommon	Potential replacement grass	Tube
	Ottochloa gracillima	Graceful grass	2	Shade preference	Common	Potential replacement grass	Tube
Ground Cover (Forbs/Sedges) Min. 8 species Stem density: 500/ha (both Grasses and Forbs)	*Centella asiatica*	Gotukola	2	-	Very common	Priority forb	Seed
	Parsonsia straminea	Monkey Rope	2	-	Very common	Priority forb	Tube
	Dianella brevipedunculata	Blue Flax Lily	2	-	Common	Priority forb	Seed; Tube
	Cyperus polystachyos	Bunchy Sedge	2	Moist; moderate salt tolerance	Common	Priority sedge	Seed; Tube
	Commelina diffusa	Wandering Jew	2	Shade preference	Common	Priority forb	Tube
	Lobelia purpurascens	White Root	2	Shade preference	Common	Priority forb	Tube

Strata and RE Requirements	Botanical Name	Common Name	Planting Stage	Habitat Preference	Presence at Greenridge	Priority of Species in Revegetation	Form Availability*
	Dianella caerulea	Blue Flax Lily	2	-	Uncommon	Potential additional/ replacement forb	Seed; Tube
	Geitonoplesium cymosum	Scrambling Lily	2	Shade preference	Uncommon	Potential additional/ replacement forb	Tube
	Juncus kraussii	Salt Marsh Rush	2	Moist; moderate salt tolerance	Uncommon	Potential additional/ replacement sedge	Seed; Tube

*Availability at time of writing RMP; see stockists closer to planting date to confirm availability and form (seed or tubestock).
nd Not detailed in the RE Technical Description

Botanical Name	Common Name	Qld Biosecurity Act / WONS	Occurrence within site	Treatment Method
Woody weeds				
Baccharis halimifolia	Groundsel bush	Category 3 restricted	Frequent	Complete removal (small plants); biological control; basal bark; cut stump; stem injection; foliar spray
Lantana camara	Lantana	Category 3 restricted / WONS	Infrequent	Mechanical removal (followed by foliar spray of regrowth); foliar spray (incl. splatter gun); cut stump; basal bark
Schinus terebinthifolius	Broad-leaved pepper tree	Category 3 restricted	Infrequent	Complete removal; basal bark; cut stump; foliar spray
Solanum chrysotrichum	Giant devil's fig	-	Infrequent	Cut stump; foliar spray
Solanum mauritianum	Wild tobacco	-	Infrequent	Complete removal (small plants); ring-bark (tall plants); cut stump; basal bark; foliar spay
Grasses				
Chloris gayana	Rhodes grass	-	Frequent	Slashing; foliar spray (glyphosate)
Setaria sphacelata	South African pigeon grass	-	Frequent	Slashing; foliar spray (glyphosate)
Sporobolus pyramidalis, S. natalensis	Giant rats tail grass	Category 3 restricted	Infrequent	Foliar spray, wick-wiping (multiple treatments, pre-emergent and glyphosate); complete removal, burn stools (small infestations)
Vines				
Ipomoea cairica	Mile-a-minute	-	Infrequent	Complete removal; foliar spray; cut stump; basal bark
Passiflora suberosa	Corky passion	-	Infrequent	Cut stump; foliar spray; complete removal
Solanum seaforthianum	Brazilian nightshade	-	Infrequent	Cut stump; foliar spray; complete removal (bag and remove fruit)
Forbs				
Ageratum houstonianum	Blue billy-goat weed	-	Infrequent	Foliar spray; complete removal
Asparagus aethiopicus	Basket asparagus	Category 3	Infrequent	Complete removal (remove entire crown, underground stem and berries); basal bark; cut stump; foliar spray (short-term knock down)
Bidens pilosa	Cobbler's pegs	-	Infrequent	Foliar spray; complete removal
Rumex crispus	Curly dock	-	Infrequent	Foliar spray
Senecio madagascariensis	Fireweed	Category 3 / WONS	Frequent	Foliar spray



Greenridge Revegetation Plan - Attachment 3

Appendix D: Pasture photo standards – SEQ (basalt)

Basalt

300 kg/ha

800 kg/ha

1400 kg/ha

Queensland Government

Basalt

2000 kg/ha

3000 kg/ha

4000 kg/ha

Queensland Government

Appendix E: Impact site field survey data – coastal swamp oak TEC

Appendix E1: Coastal swamp oak TEC raw data

Please see file supplied separately.

Appendix E2: Coastal swamp oak TEC summarised HQS data

Please see file supplied separately.

Appendix F: Impact site field survey data – koala habitat

Appendix F1: Koala habitat raw data

Please see file supplied separately.

Appendix F2: Koala habitat summarised HQS data

Please see file supplied separately.

Appendix G: Impact site field survey data – GHFF habitat

Appendix G1: GHFF habitat raw data

Please see file supplied separately.

Appendix G2: GHFF habitat summarised HQS data

Please see file supplied separately.

Appendix H: Tabooba BioCondition data

Please see file supplied separately.

Appendix I: Greenridge BioCondition data

Please see file supplied separately.

Appendix J: Offset HQS tables coastal swamp oak TEC

Please see file supplied separately.

Appendix K: Offset HQS tables koala habitat

Please see file supplied separately.

Appendix L: Offset HQS tables GHFF habitat

Please see file supplied separately.

Appendix M: OAG outputs coastal swamp oak TEC

Please see file supplied separately.

Appendix N: OAG outputs koala habitat

Please see file supplied separately.

Appendix O: OAG outputs GHFF habitat

Please see file supplied separately.

Appendix E: Impact Site Survey Data

Appendix E1: Coastal Swamp Oak TEC

SO17-IAU2

SO18-IAU2

COASTAL SWAMP OAK FOREST EEC
IMPACT SITE HABITAT QUALITY SURVEY: NORTH

COOMERA CONNECTOR EXTENT OF WORKS

IMPACT ASSESSMENT UNIT1: 11.75HA

IMPACT ASSESSMENT UNIT 2: o.4667HA

IMPACT ASSESSMENT UNIT3: 2.798HA

I8J HABITAT QUALITY OUADRAT/TRANSECT

COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY C(NOT CRITICAL HABITAT)

COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY B (CRITICAL HABITAT)

COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY A (CRITICAL HABITAT)

NOTES:
Mapshavebeen compiled usingMapinfo geographicinformation system (GIS) Software (Vcr.11.5). Information, 1,1tilized includes:
- Baseplansandextentof worksprovidedby OLDTMR
- DESregional ecosystems mapping Ver11
-2020 georeferenced aerialphotographs sourced fromNearmap
-Surveysites loc.ated via handheld Garmin GPSMap 6'2sdevice andcoordinated in MGAz56. Loc,::1tions tablulated anddisplayed in Mapinfo Ver11.5uponthe aerial photograph and extent of siteprovided
- Positional acwracy of displayed points+/.10m

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Map Created:7-7-22

COASTAL SWAMP OAK FOREST EEC
IMPACT SITE HABITAT QUALITY SURVEY: NORTH

- COOMERA CONNECTOR EXTENT OF WORKS
- IMPACT ASSESSMENT UNIT1: 11.75HA
- IMPACT ASSESSMENT UNIT 2: o.4667HA
- r7 IMPACT ASSESSMENT UNIT3: 2.798HA
- I8J HABITAT QUALITY OUADRAT/TRANSECT
- COASTAL SWAMP OAK FOREST EEC: CONDITION CATEGORY C(NOT CRITICAL HABITAT)
- COASTAL SWAMP OAK FOREST EEC: CONDITION CATEGORY B (CRITICAL HABITAT)
- COASTAL SWAMP OAK FOREST EEC: CONDITION CATEGORY A (CRITICAL HABITAT)

NOTES,
Mapshave been compiled using Mapinfo geographic information system (GIS) Software (Ver.11.5). Information 1,1tilized includes:
- Baseplansandextentof worksprovidedby OLDTMR
- DESregional ecosystems mapping Ver11
-2020 georeferenced aerial photographssourced fromNearmap
-Surveysites loc.ated via handheld Garmin GPSMap 62s device andcoordinated in MGAz56. Locations tablulated and displayed in Mapinfo Ver11.5upon the aerial photograph and extentof siteprovided
- Positional acwracy of displayed points+/. 10m

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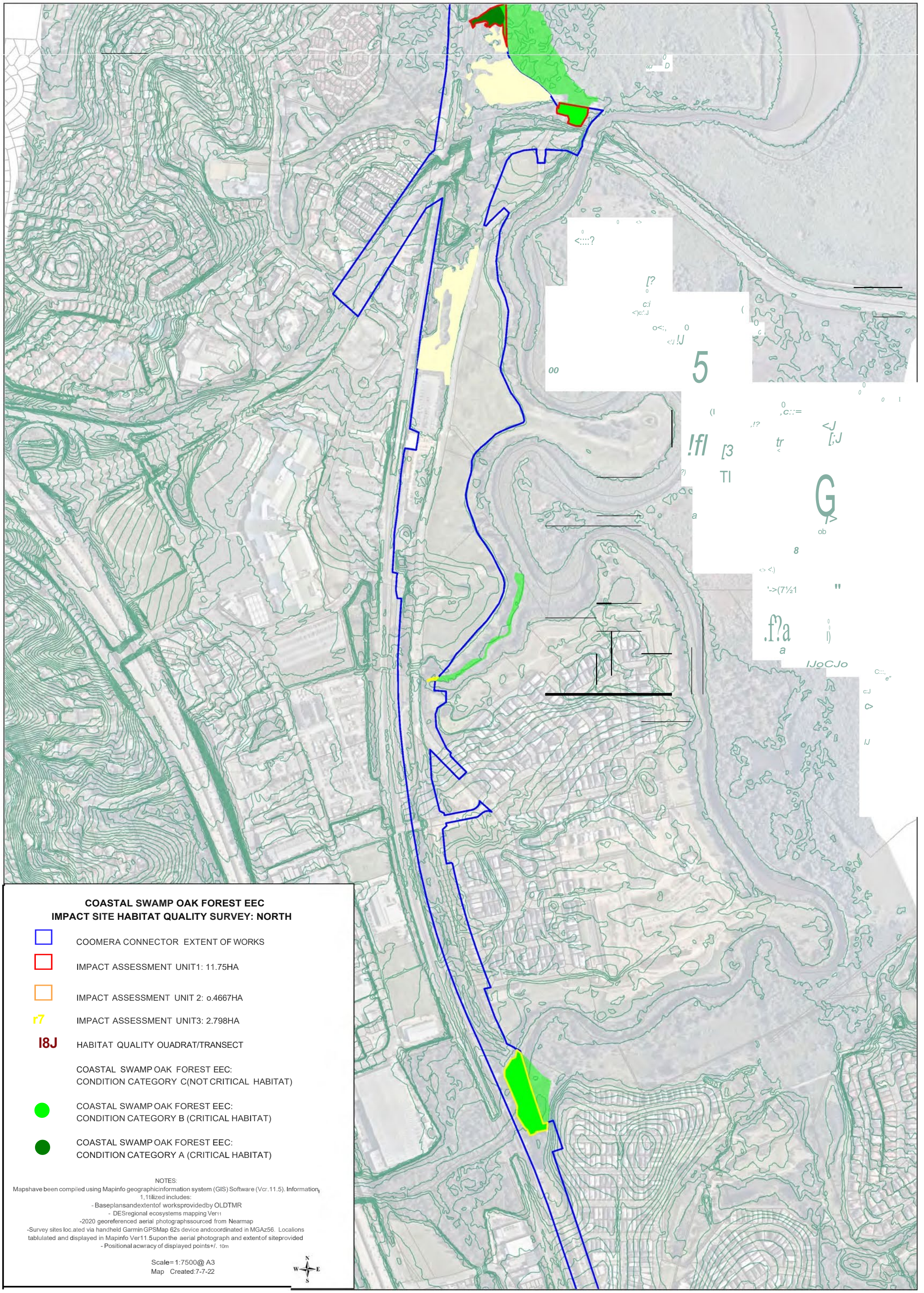
COASTAL SWAMP OAK FOREST EEC
IMPACT SITE HABITAT QUALITY SURVEY: NORTH
COOMERA CONNECTOR EXTENT OF WORKS
IMPACT ASSESSMENT UNIT1: 11.75HA
IMPACT ASSESSMENT UNIT 2: o.4667HA
r7
IMPACT ASSESSMENT UNIT3: 2.798HA
I8J
HABITAT QUALITY OUADRAT/TRANSECT
COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY C(NOT CRITICAL HABITAT)
COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY B (CRITICAL HABITAT)
COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY A (CRITICAL HABITAT)
NOTES:
Mapshave been compiled using Mapinfo geographicinformation system (GIS) Software (Vcr.11.5). Information 1,1tilized includes:
- Baseplansandextentof worksprovidedby OLDTMR
- DESregional ecosystems mapping Ver11
-2020 georeferenced aerial photographssourced from Nearmap
-Survey sites loc.ated via handheld Garmin GPSMap 62s device andcoordinated in MGAz56. Localions tablulated and displayed in Mapinfo Ver11.5upon the aerial photograph and extentof siteprovided
- Positional acwracy of displayed points+/. 10m
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COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING

COOMERA CONNECTOR EXTENT OF WORKS

IMPACT ASSESSMENT UNIT 2: o.4667HA

1KM BUFFER

REMNANTVEGETATIONWITHIN 1KM

REGROWTH VEGETATION WITHIN 1KM

IMPACT ASSESSMENT UNIT UNCONNECTED PERIMETER

IMPACT ASSESSMENT UNITY CONNECTED PERIMETER

NOTES,
Maps have been compiled using Mapinfo geographic informationsyste-m (GIS) Software(Ver. 11.5).Information utilized includes:
- Baseplansand*extent* of worksprovided byOLDTMR
- DESregional ecosystems mapping Ver11@ 2-2-21
- 2020 georcfcrcnccd aerial photographs sourced from Ncarmap
-Surveysites located via handheld Garmin GPS Map 62sdeviceandc.oordinated in MGAz56. Locations tablulated and displayed in Mapinfo Ver11.5 upon the aerialphotograph andextent of site provided
- Positional accuracy of displayed points+/- 1.om

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COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING

- COOMERACONNECTOR EXTENT OF WORKS
- IMPACT ASSESSMENT UNIT1: 11.75HA
- 1KM BUFFER
- REMNANT VEGETATION WITHIN 1KM
- REGROWTH VEGETATION WITHIN 1KM
- IMPACT ASSESSMENT UNITCONNECTED WITH >sooHA REMNANTVEGETATION

NOTES:

Maps havebeencompiled usingMapinfo geographic information system(GIS) Software (Ver.11.5}. Information utilized includes:

- Base plans and extent of works providedby OLDTMR
- DESregional ecosystemsmappingVern@2-2-21
- 2020 georeferenced aerial photographs sourced from Nc.:irmap
- Surveysiteslocated via h,:mdheldGarminGPS Map 62s device and coordinated in MGAz56. Locations tablulated and displayed in Mapinfo Ver11.5upon the aerialphotograph and extent of site provided
- Positional accuracy of displayed points+/- 10m

Scale= 1:7500@ A3

Map Created: 13-7-22

N W E S

COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING

- COOMERA CONNECTOR EXTENT OF WORKS
- IMPACT ASSESSMENT UNIT 3: 2.798HA
- 1KM BUFFER
- REMNANTVEGETATION WITHIN 1KM
- REGROWTH VEGETATION WITHIN1KM
- IMPACT ASSESSMENT UNIT UNCONNECTED PERIMETER
- IMPACT ASSESSMENT UNITY CONNECTED PERIMETER

NOTES,
Mapshave been compiled using Mapinfo geographicinformation system (GIS) Software(Ver. 11..5}. Information utiliz.edincludes:
• Baseplansand extent of worksprovided by OLDTMR
• DES regional ecosystems mapping Ver11@ 2-2-21
-2020 georeferenced aerialphotographs sourced fromNearmap
-Survey sites located via handheldGarmin GPS Map 62sdevice andcoordinated in MGAz56. Locations tablulated anddisplayed in MapinfoVer 11.5upon the aerial photograph.:ind extent of siteprovided
- Positional ac.curacyof displayed points+/- 10m

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Map Created, 13-7-22

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COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING

COOMERA CONNECTOR EXTENT OF WORKS

IMPACT ASSESSMENT UNIT 3: 2.798HA

1KM BUFFER

REMNANT VEGETATION WITHIN 1KM

REGROWTH VEGETATION WITHIN 1KM

IMPACT ASSESSMENT UNIT CONNECTED WITH >500HA REMNANT VEGETATION

NOTES,

Mapshave been compiledusing Mapinfo geographic information system (GtS) Software(Ver.11.5).Information utilited includes:

- Base plansandextent of worksprovided byOLDTMR
- DES regional ecosystemsmapping Ver11@2-2-21
- 202:0georeferell(ed aerial photographs sourced from Nearmap
- Surveysiteslocated viahandheldGa,minGPSMap6l.sdevice andcoordinated in MGAz56. Locations tablulated aod displayed in MapinfoVer 11.5 upon the aerial photograph and extent of siteprovided
- Positional accuracyof displayed points+/-1.om

Scale = 1:7500 @ A3

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HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 1 (IAU1-SO5)

Part C - Site Data

Property	SWAMP OAK EEC CH WITHIN LARGE CONNECTED PATCHES [COOMBABAH + SURROUNDS] DATA SCALED FROM FIELD SITE SO5 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
1	5.875	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	533,199	6,914,528
GDA 94 ☑	50m Mark	Zone	Easting	Northing
		56		
Plot bearing			Recorders	gd

Site description and Location (including details of discrete polygons within the assessment unit)
within extensive Swamp Oak Forest/Wetland associated with Coombabah. Tidal influence. Refer images of Swamp Oak Field Sites SO3-SO13, SO15, SO19

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	2		
Scientific Name	*Casuarina glauca dominant*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	1		
Scientific Name	*Phragmites australis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Juncus spp.*	Scientific Name	*Acrostichum speciosum*
Scientific Name	*Eleocharis dulcis*	Scientific Name	
Scientific Name	*Alternanthera denticulata*	Scientific Name	
Scientific Name	*Baumea articulata*	Scientific Name	
Scientific Name	*Gahnia clarkei*	Scientific Name	
Scientific Name	*Lygodium microphyllum*	Scientific Name	
Scientific Name	*Cyclosorus interruptus*	Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	4.00%		
Common Name	*Ipomoea cairica*	Common Name	
Common Name	*Syagrus romanzoffiana*	Common Name	
Common Name	*Schinus terebinthifolius*	Common Name	
Common Name	*Solanum hispidum*	Common Name	
Common Name	*Salvinia molesta [browned off and smothered with pine*	Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	200.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	0.00%	10.00%	15.00%	0.00%	20.00%	9.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	90.00%	80.00%	20.00%	30.00%	20.00%	48.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	55
Total Number Large Trees:	55		

Median Tree Canopy Height Measurements	Canopy:	13.80	Sub-canopy:	6.70	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Tree canopy cover %	Canopy:	68.00%	Sub-canopy:	17.60%	Emergent:	
Shrub canopy cover %	4.40%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	5 - >200ha	4 - >75% or >500ha connection	3 - >30-75% remnant		
SCORE	10	5	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS SESSM
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

Following field survey, the area meeting the key diagnostic criteria was >100 hectares. The extent of contiguous state mapped Regional Ecosystem 12.1.1 has been utilised in this calculation which represents the vegetation within the field site. Therefore, the patch is assigned a 'large' patch size class (>5ha).

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the investigated areas away from edge affected areas.

The field survey performed resulted in vegetation quality class of 'high.'

Therefore, in accordance with Table 1 of the guideline this site (and connected areas of the same habitat type) is assigned Category A and per Section 3.4 of the Guideline is considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO5	**Recorder:**	GD						
Purpose	20M X 20M CONDITION PLOT								
Location:	East of B_3 & ADJACENT AREAS WITHIN COOMBABAH WETLANDS SOUTH OF HELENSVALE ROAD. EXPANSIVE ECOSYSTEM								
GPS coordinates	**Zone**	5	6	**E**	533,155	**N**	6,914,430	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	30-40%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca [other canopy trees = Melaleuca quinquenervia]	90%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	13.8m	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	>100ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	>100ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	>100ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	>100ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	~95%	Measured within 20m x 20m survey plot	√
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	~95%	Measured within 20m x 20m survey plot	√
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	~95%	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore EEC.

NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER %
T/S	Casuarina glauca	5-10	3	5
E	Acrostichum speciosum	100-500	6	60-70
G	Phragmites australis	100-500	4	10
L	Parsonsia straminae	20-50	4	5
S	Eleocharis dulcis	1	1	<1
-	Pine needles / mud			60
F	Alternanthera denticulata	20-50	3	4
T/S	Melaleuca quinquenervia	2	1	2
R	Baumea articulata	1	1	<1
V	Gahnia clarkei	50-100	4	20
E	Lygodium microphyllum	5-10	3	1
E	Cyclosorus interruptus	3	1	<1
E	Asplenium australasicum	1	1	<1
E	Platycerium bifurcatum	1	1	<1
	NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER		**95%**	

Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover %
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
L	Ipomoea cairica	√	1		<1
P	Syagrus romanzoffiana		1		<1
S	Schinus terebinthifolius	√	1		<1
S	Solanum hispidum		1		<1
E	Salvinia molesta [browned off and smothered with pine needles]	√	50-100		4-5
	NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**5%**	

CANOPY IMAGES


UNDERSTOREY IMAGES

BELOW IMAGES FROM ELSEWHERE IN PATCH





EECFIELD-POINTS.gm...
GPS: -27.89583° S, 153.33713° E
Elev: 12.94 m
Accuracy: 8 m

HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 1 (IAU1-SE of SO6)

Part C - Site Data

Property	SWAMP OAK EEC CH WITHIN LARGE CONNECTED PATCHES [COOMBABAH + SURROUNDS] DATA SCALED FROM FIELD SOUTHEAST OF SITE SO6 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
2	5.875	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	533,428	6,913,949
GDA 94 ☑		Zone	Easting	Northing
	50m Mark			
Plot bearing			Recorders	gd

Site description and Location (including details of discrete polygons within the assessment unit)
within extensive Swamp Oak Forest/Wetland associated with Coombabah. Tidal influence. Refer images of Swamp Oak Field Sites SO3-SO13, SO15, SO19

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Phragmites australis*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Eleocharis dulcis*	Scientific Name	
Scientific Name	*Alternanthera denticulata*	Scientific Name	
Scientific Name	*Cygnogeton striata*	Scientific Name	
Scientific Name	*Lobelia stenophylla*	Scientific Name	
Scientific Name	*Cynanchum carnosum*	Scientific Name	
Scientific Name	*Acrostichum speciosum*	Scientific Name	
Scientific Name		Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Asparagus aethicopus*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	185.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	10.00%	40.00%	20.00%	50.00%	85.00%	41.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	90.00%	60.00%	40.00%	50.00%	15.00%	51.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	50
Total Number Large Trees:	50		

Median Tree Canopy Height Measurements	Canopy:	13.80	Sub-canopy:	6.80	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	70.40%	Sub-canopy:	19.80%	Emergent:	
Shrub canopy cover %	2.80%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	5 - >200ha	4 - >75% or >500ha connection	3 - >30-75% remnant		
SCORE	10	5	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

Following field survey, the area meeting the key diagnostic criteria was >100 hectares. The extent of contiguous state mapped Regional Ecosystem 12.1.1 has been utilised in this calculation which represents the vegetation within the field site. Therefore, the patch is assigned a 'large' patch size class (>5ha).

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the investigated areas away from edge affected areas.

The field survey performed resulted in vegetation quality class of 'high.'

Therefore, in accordance with Table 1 of the guideline this site (and connected areas of the same habitat type) is assigned Category A and per Section 3.4 of the Guideline is considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO6	**Recorder:**	GD						
Purpose	20M X 20M CONDITION PLOT								
Location:	BETWEEN B_4 AND B_5 WITHIN COOMBABAH WETLANDS SOUTH OF HELENSVALE ROAD. EXPANSIVE ECOSYSTEM								
GPS coordinates	**Zone**	5	6	**E**	533,248	**N**	6,914,223	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	40-50%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca	100%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	18.2m	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	>100ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	>100ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	>100ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	>100ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	~90-95%	Measured within 20m x 20m survey plot	√
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	~90-95%	Measured within 20m x 20m survey plot	√
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	~90-95%	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore EEC.

NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER %
T/S	Casuarina glauca	5-10	3	5
E	Acrostichum speciosum	100-500	6	60-70
G	Phragmites australis	100-500	4	10
L	Parsonsia straminae	20-50	3	5
S	Eleocharis dulcis	100-500	4	5
-	Pine needles / mud			50
F	Alternanthera denticulata	100-500	4	5
T/S	Avicennia marina	2	1	2
E	Lygodium microphyllum	1	1	<1
E	Cyclosorus interruptus	1	1	<1
E	Asplenium australasicum	1	1	<1
E	Platycerium superbum	1	1	<1
S/T	Melaleuca salicina	1	1	1
S/T	Jagera pseudorhus	1	1	1
S/T	Cupaniopsis anacardioides	2	1	3
S/T	Melicope elleryana	2	1	2
S/T	Ficus coronata	1	1	1
	NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER		**95%**	

Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover %
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
F	Solanum hispidum		3	1	<1
L	Ipomoea cairica	√	1	1	<1
S	Senna pendula	√	1	1	<1
S	Lantana camara	√	1	1	<1
S	Solanum mauritianum		4	1	2
	NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**5%**	

PLANIT


BELOW IMAGES FROM ELSEWHERE IN PATCH






HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 2 (IAU-SO17)

Part C - Site Data

Property	SWAMP OAK EEC CH ADJACENT SHIPPER DRIVE [SOUTH OF OAKEY CREEK] DATA SCALED FROM FIELD SITE SO17 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
3	0.23335	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum			Zone	Easting	Northing
WGS 84 ☐	0m Mark		56	532278	6918516
GDA 94 ☑	50m Mark		Zone	Easting	Northing
			56		
Plot bearing				Recorders	GD

Site description and Location (including details of discrete polygons within the assessment unit)
Swamp Oak Forest/Wetland associated with Oakey Creek. Tidal influence. Refer images of Swamp Oak Field Sites SO17-18.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca dominant*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	2		
Scientific Name	*Enchylaena tomentosa*	Common Name	
Scientific Name	*Suaeda arbusculoides*	Common Name	
Scientific Name	*Causarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	1		
Scientific Name	*Sporobolus virginicus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Juncus krausii*	Common Name	
Scientific Name	*Alternanthera denticulata*	Common Name	
Scientific Name	*Commelina diffusa*	Common Name	
Scientific Name	*Cyperus spp.*	Common Name	
Scientific Name	*Fimbristylis ferriginea*	Common Name	
Scientific Name	*Eclipta prostrata*	Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Asparagus aethiopicus cv. Sprengeri*	Common Name	
Scientific Name	*Solanum seaforthium*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Solanum americanum*	Common Name	
Scientific Name	*Cuphea carthagenensis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	140.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	75	Quadrat 5	Average
	70.00%	80.00%	80.00%	95.00%	70.00%	79.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	30.00%	20.00%	20.00%	25.00%	30.00%	25.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	85
Total Number Large Trees:	85		

Median Tree Canopy Height Measurements	Canopy:	15.10	Sub-canopy:	6.80	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	45.00%	Sub-canopy:	32.40%	Emergent:	
Shrub canopy cover %	10.00%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	3 - 26 - 100ha	2 - >10% - <50%	3 - >30-75% remnant		
SCORE	5	2	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS SES
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

Following field survey and GIS investigation, the area meeting the key diagnostic criteria was ~13.45 hectares. Therefore, the patch is assigned a 'large' patch size class (>5ha). The extent of contiguous state mapped Regional Ecosystem 12.1.1/12.3.20 has been utilised in this calculation which represents the vegetation connected to the field site. Although there are some areas of separation (Shipper Drive, Mangrove Communities of Oakey Creek, areas of Saltmarsh) the separation is less than 30 metres in width and therefore the patches are considered contiguous.

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the overall investigated patch and away from obvious edge effected areas.

The field survey performed resulted in vegetation quality class of 'high.'

Therefore, in accordance with Table 1 of the guideline Patch SO17 (and connected areas of the same habitat type where the condition criteria are met) is assigned Category A and per Section 3.4 of the Guideline is considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO17	**Recorder:**	TR/GD						
Purpose	20M X 20M CONDITION PLOT								
Location:	East of Shipper Drive and South of Oakey Creek at Coomera								
GPS coordinates	**Zone**	5	6	**E**	532278	**N**	6918516	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	40-50%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca	100%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	15.1	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	~13.45ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	~13.45ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	~13.45ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	~13.45ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	>95	Measured within 20m x 20m survey plot	√
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	>95	Measured within 20m x 20m survey plot	√
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	>95	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore EEC.

NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH	SPECIES	EST	B-B SCORE	EST COVER %

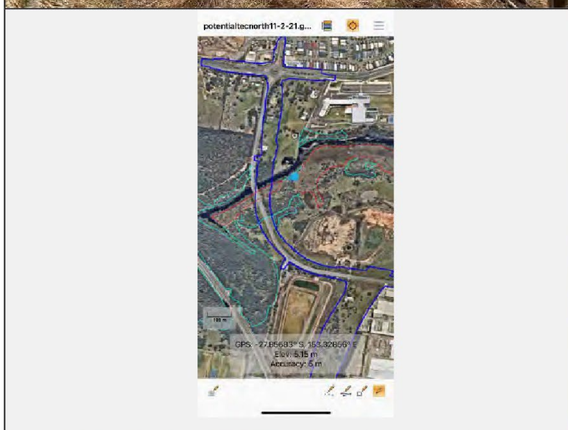
FORM		ABUNDANCE		
L	Parsonsia straminae (on trunks)	1-5	1	1
G	Sporobolus virginicus	500-1000	7	>95
R	Juncus krausii	1-5	1	1
F	Alternanthera denticulata	100	4	2
F	Commelina diffusa	50-100	4	2
V	Cyperus spp.	5-10	2	<1
F	Enchylaena tomemtosa	1-5	1	<1
V	Fimbristylis ferriginea	1-5	1	<1
V	Suaeda arbusculoides	1-5	1	<1
F	Eclipta prostrata	50-100	3	1
-	Pine needles/mud		2	<1
NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**>95%**	

Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover%
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
L	Passiflora subpeltata		20	3	<1
D	Asparagus aethiopicus cv. sprengeri	√	5	1	<1
L	Solanum seaforthium		3	1	<1
T/S	Schinus terebinthifolius	√	5	1	<1
S	Solanum americanum		10	2	<1
F	Cuphea carthagenensis		10	2	<1
NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER				**<5%**	

BELOW IMAGES FROM ELSEWHERE IN PATCH


potentialtecnorth11-2-21.g...
GPS: -27.85683° S, 153.32856° E
Elev: 5.15 m
Accuracy: 5 m

HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 2 (IAU-SO18)

Part C - Site Data

Property	SWAMP OAK EEC CH ADJACENT SHIPPER DRIVE [SOUTH OF OAKEY CREEK] DATA SCALED FROM FIELD SITE SO18 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
4	0.23335	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum			Zone	Easting	Northing
WGS 84	☐	0m Mark	56	532182	6918471
GDA 94	☑		Zone	Easting	Northing
		50m Mark			
Plot bearing				Recorders	

Site description and Location (including details of discrete polygons within the assessment unit)
Swamp Oak Forest/Wetland associated with Oakey Creek. Tidal influence. Refer images of Swamp Oak Field Sites SO17-18.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	2		
Scientific Name	*Einadia hastata*	Common Name	
Scientific Name	*Suaeda arbusculoides*	Common Name	
Scientific Name	*Causarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	1		
Scientific Name	*Sporobolus virginicus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*Juncus krausii*	Common Name	
Scientific Name	*Commelina diffusa*	Common Name	
Scientific Name	*Fimbristylis ferriginea*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Paspalum urvillei*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Baccharis halimifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	395.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	95.00%	85.00%	98.00%	90.00%	92.60%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	5.00%	2.00%	10.00%	5.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	30
Total Number Large Trees:	30		

Median Tree Canopy Height Measurements	Canopy:	13.40	Sub-canopy:	5.80	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	62.60%	Sub-canopy:	14.40%	Emergent:	
Shrub canopy cover %	15.40%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	3 - 26 - 100ha	2 - >10% - <50%	3 - >30-75% remnant		
SCORE	5	2	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

Following field survey and GIS investigation, the area meeting the key diagnostic criteria was ~13.45 hectares. Therefore, the patch is assigned a 'large' patch size class (>5ha). The extent of contiguous state mapped Regional Ecosystem 12.1.1/12.3.20 has been utilised in this calculation which represents the vegetation connected to the field site. Although there are some areas of separation (Shipper Drive, Mangrove Communities of Oakey Creek, areas of Saltmarsh) the separation is less than 30 metres in width and therefore the patches are considered contiguous.

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the overall investigated patch and away from obvious edge effected areas.

The field survey performed resulted in vegetation quality class of 'high.'

Therefore, in accordance with Table 1 of the guideline Patch SO18 (and connected areas of the same habitat type where the condition criteria are met) is assigned Category A and per Section 3.4 of the Guideline is considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO18	**Recorder:**	TR/GD						
Purpose	20M X 20M CONDITION PLOT								
Location:	West of Shipper Drive and South of Oakey Creek at Coomera								
GPS coordinates	**Zone**	5	6	**E**	532182	**N**	6918471	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	30-40%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca	100%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	13.4	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	~13.45ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	~13.45ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	~13.45ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	~13.45ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	>95	Measured within 20m x 20m survey plot	√
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	>95	Measured within 20m x 20m survey plot	√
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	>95	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore EEC.

NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH	SPECIES	EST	B-B SCORE	EST COVER %

FORM		ABUNDANCE		
T/S	Casurina glauca	40-50	4	5
G	Sporobolus virginicus	>1000	7	90
R	Juncus krausii	1-5	1	<1
S	Einadia hastata	50-100	4	1
F	Commelina diffusa	20-50	3	<1
V	Fimbristylis ferriginea	1-5	1	<1
NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**>95%**	

Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover%
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
L	Passiflora subpeltata		1	1	<1
G	Paspalum urvillei		1	1	<1
T/S	Schinus terebinthifolius	√	10	3	1
S	Baccharis halimifolia	√	3	1	<1
NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER				**<5%**	

BELOW IMAGES FROM ELSEWHERE IN PATCH

HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 3 (IAU3-SO3)

Part C - Site Data

Property	SWAMP OAK LEG SITUATION ON PROXIMATE TO LARGE CONNECTED PATCHES [COOMBABAH SURROUNDS] BUT HIGHER LEVEL OF WEED INVASION DATA SCALED FROM FIELD SITE SO3 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
5	1.399	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		0m Mark	Zone	Easting	Northing
WGS 84	☐		56	533,012	6,914,671
GDA 94	☑	50m Mark	Zone	Easting	Northing
Plot bearing				Recorders	

Site description and Location (including details of discrete polygons within the assessment unit)
Proximate but fragmented by major roadway from extensive Swamp Oak Forest/Wetland associated with Coombabah. Refer images of Swamp Oak Field Sites SO3. More weed invasion than AU1-AU2

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	4		
Scientific Name	*Casuarina glauca dominant*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	2		
Scientific Name	*Phragmites australis*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	*Juncus spp.*	Common Name	
Scientific Name	*Alternanthera denticulata*	Common Name	
Scientific Name	*Cynanchum carnosum*	Common Name	
Scientific Name	*Cycnogeton procerus*	Common Name	
Scientific Name	*Acrostichum speciosum*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	30.00%		
Scientific Name	*Asparagus aethiopicus cv. Sprengeri*	Common Name	
Scientific Name	*Ipomoea cairica*	Common Name	
Scientific Name	*Senna pendula*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Sphagneticola trilobata*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Baccharis halimifolia*	Common Name	
Scientific Name	*Corymbia torelliana*	Common Name	
Scientific Name	*Melinis minutiflora*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	136.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Native perennial grass cover	30.00%	20.00%	5.00%	50.00%	80.00%	37.00%

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
Organic Litter	50.00%	70.00%	50.00%	50.00%	20.00%	48.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	95
Total Number Large Trees:	95		

Median Tree Canopy Height Measurements	Canopy:	11.80	Sub-canopy:	5.50	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	87.60%	Sub-canopy:	12.20%	Emergent:	
Shrub canopy cover %	0.00%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	1 - <5ha	2 - >10% - <50%	3 - >30-75% remnant		
SCORE	0	2	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS SESSM
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

Following field survey, the area meeting the key diagnostic criteria was >100 hectares. The extent of contiguous state mapped Regional Ecosystem 12.1.1 has been utilised in this calculation which represents the vegetation within the field site. Therefore, the patch is assigned a 'large' patch size class (>5ha). Although this smaller area (~0.9ha) is separated from the larger patch within Coombabah by Helensvale Road, the separation is less than 30 metres in width and therefore the patches are considered contiguous.

To define the boundary of the patch dominated by Casuarina glauca the area was field surveyed and the outer canopy defined with a handheld GPS unit. Where Casuarina glauca presence in the canopy was visually estimated to fall below 50%, the area was excluded (i.e. within the transition to Paperbark Forest)

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the investigated areas away from edge affected areas.

The field survey performed resulted in vegetation quality class of 'good.'

Therefore, in accordance with Table 1 of the guideline this site (and connected areas of the same habitat type) is assigned Category B and per Section 3.4 of the Guideline is considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO3		**Recorder:**	GD					
Purpose	20M X 20M CONDITION PLOT								
Location:	B25 NORTH OF HELENSVALE ROAD.								
GPS coordinates	**Zone**	5	6	**E**	533,012	**N**	6,914,671	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	60%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca [other canopy species = Melaleuca quinquenervia]	95%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	11.8m	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	>100ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	>100ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	>100ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	>100ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	~75%	Measured within 20m x 20m survey plot	X
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	~75%	Measured within 20m x 20m survey plot	√

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	~75%	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore EEC.

NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER %
T/S	Casuarina glauca	10-20	4	8
E	Acrostichum speciosum	5	2	1-2
G	Phragmites australis	100-500	5	20
L	Parsonsia straminae	20-50	3	5
R	Juncus spp.	10-20	3	1
-	Pine needles/litter			70
F	Alternanthera denticulata	10-20	3	1
S/T	Alphitonia excelsa	1	1	1
G	Imperata cylindrica	20-50	3	2
L	Cynanchum carnosum	2	1	<1
S/T	Melaleuca quinquenervia	5	**2**	2
S/T	Cupaniopsis anacardioides	3	**1**	1
	NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER		**75%**	

Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover %
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
F	Asparagus aethiopicus cv. sprengeri	√	5	2	1
L	Ipomoea cairica	√	5-10	3	<1
S	Senna pendula	√	2	1	<1
S	Lantana camara	√	1	1	<1
L	Passiflora suberosa		1	1	<1
F	Sphagneticola trilobata	√	100-500	4	15-20
S/T	Schinus terebinthifolius	√	5-10	4	7-8
S	Baccharis halimifolia	√	10-20	3	2
S/T	Corymbia torelliana		3	2	1
G	Melinis minutiflora		10-20	3	1
	NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**25%**	

EXCLUDED AREAS [CANOPY NOT DOMINATED BY CASUARINA GLAUCA]

AREAS EXCLUDED FROM 20M X 20M CONDITION PLOT [OBVIOUS EDGE AFFECTED AREAS, NOT REPRESENTATIVE]

HABITAT ASSESSMENT FIELD OBTAINED DATA: IMPACT ASSESSMENT UNIT 3 (IAU3-SO9)

Part C - Site Data

Property	SWAMP OAK EEC CR WITHIN OR PROXIMATE TO LARGE CONNECTED PATCHES [COOMBABAH + SURROUNDS] BUT HIGHER LEVEL OF WEED INVASION. DATA SCALED FROM FIELD SITE SO3 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
6	1.399	12.1.1	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum	0m Mark	Zone	Easting	Northing
WGS 84		56	533,513	6,913,511
GDA 94 ☑	50m Mark	Zone	Easting	Northing
Plot bearing			Recorders	

Site description and Location (including details of discrete polygons within the assessment unit)
Within extensive Swamp Oak Forest/Wetland associated with Coombabah. Refer images of Swamp Oak Field Sites SO9. More weed invasion than AU1-AU2

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	4		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name	*Livistona australis*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Archontophoenix cunninghamiana*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	1		
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	2		
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Oplismenus aemulus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	2		
Scientific Name	*Stephania japonica*	Common Name	
Scientific Name	*Acrostichum speciosum*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	75.00%		
Scientific Name	*Senna pendula*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Ipomoea cairica*	Common Name	
Scientific Name	*Asparagus aethiopicus cv. Sprengeri*	Common Name	
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Murraya paniculata*	Common Name	
Scientific Name	*Solanum seaforthium*	Common Name	
Scientific Name	*Paspalum dilatatum*	Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	216.00		
1		26	
2		27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	0.00%	0.00%	0.00%	10.00%	10.00%	4.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	30.00%	25.00%	100.00%	90.00%	90.00%	67.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :		Non- Eucalypt Large tree DBH benchmark used:	29
Number of large eucalypt trees:		Number of large non eucalypt trees:	50
Total Number Large Trees:	50		

Median Tree Canopy Height Measurements	Canopy:	14.60	Sub-canopy:	7.10	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	60.00%	Sub-canopy:	50.00%	Emergent:	
Shrub canopy cover %	0.00%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	5 - >200ha	4 - >75% or >500ha connection	3 - >30-75% remnant		
SCORE	10	5	4		

Case Reference	EPBC2020-8646
Project Name	CONNECTOR. IMPACT SITE SWAMP OAK EEC HABITAT QUALITY AS
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number									
			1	2	3	4	5	6	7	8	9	10
		Assessment Unit Area (ha)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		Regional Ecosystems	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		2. Native plant species richness										
		- Trees	200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Shrubs	100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		- Grasses	50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Forbs	266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		3. Tree canopy height										
		- Canopy Layer	115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Sub-Canopy Layer	95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
		- Emergent Layer										
		4. Tree canopy cover										
		- Canopy Layer	101.49%	105.07%	67.16%	93.43%	130.75%	89.55%				
		- Sub-Canopy Layer	76.52%	86.09%	140.87%	62.61%	53.04%	217.39%				
		- Emergent Layer										
		5. Shrub canopy cover	88.00%	56.00%	200.00%	308.00%	0.00%	0.00%				
		6. Native perennial grass cover	10.59%	48.24%	92.94%	108.94%	43.53%	4.71%				
		7. Organic litter	960.00%	1020.00%	500.00%	108.00%	960.00%	1340.00%				
		8. Large trees	59.78%	54.35%	92.39%	32.61%	103.26%	54.35%				
		9. Coarse woody debris (Meters)	55.56%	51.39%	38.89%	109.72%	37.78%	60.00%				
		10. Weed cover	4.00%	2.00%	2.00%	2.00%	30.00%	75.00%				
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	0.00	10.00				
		12. Connectedness (fragmented)	5.00	5.00	2.00	2.00	2.00	5.00				
		13. Context (fragmented)	4.00	4.00	4.00	4.00	4.00	4.00				
		14. Distance from water (intact)										
		15. Ecological corridors										

PREVIOUSLY SUBMITTED SWAMP OAK FOREST EEC ASSESSMENT INFORMATION REFER EPBC 2020/8646 REFERRAL PACKAGE ATTACHMENT 8

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY DISCUSSION

The key diagnostic criteria are considered to be met for this patch/copse including:

- having canopy trees dominated by Casuarina glauca
- having crown cover of at least 10%

These are not onerous criteria as this particular EEC contains a low height criteria (10m) so even young regrowth can be considered.

To define the boundary of the patch dominated by Casuarina glauca the area was field surveyed and the outer canopy defined with a handheld GPS unit. Where Casuarina glauca presence in the canopy was visually estimated to fall below 50%, the area was excluded (i.e. within areas to the west in which the canopy is dominated by Eucalyptys/Corymbians with few Casuarina [RE12.3.11])

Following field survey, the area meeting the key diagnostic criteria was determined >100 hectares. The extent of contiguous state mapped Regional Ecosystem 12.1.1 has been utilised in this calculation which represents the vegetation within the field site.

Therefore, the patch is assigned a 'large' patch size class (>5ha).

A field quadrat survey was then performed in accordance with Section 3.2 and Appendix 3 of the Guidelines. To account for variability the patch was traversed first and the field plot then placed within an area reflective of the investigated areas away from edge affected areas.

Woody weeds are abundant in the understorey of this patch.

The field survey performed resulted in vegetation quality class of borderline 'moderate' quality (the lowest quality class).

Therefore, in accordance with Section 3 of the Guideline, this site (and connected areas of the same habitat type) is assigned Category C. Per Section 3.4 of the Guideline this Category is not considered to be habitat critical to the survival of the ecological community.

COASTAL SWAMP OAK (CASUARINA GLAUCA) FOREST OF NEW SOUTH WALES AND SOUTH EAST QUEENSLAND ECOLOGICAL COMMUNITY FIELD ASSESSMENT

Site No.	SO9			**Recorder:**	GD				
Purpose	20M X 20M CONDITION PLOT								
Location:	EAST OF B11 WITHIN COOMBABAH WETLANDS TO THE EAST OF THE RAILWAY LINE. FOOTHILL ADJACENT INTERTIDAL AREAS								
GPS coordinates	**Zone**	5	6	**E**	533,513	**N**	6,913,511	**Datum:**	MGAZ56

KEY DIAGNOSTICS-CANOPY

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Crown cover of at least 10%	50-60%	E (obviously >10%. Refer Images)	√
Canopy dominated by Casuarina glauca Other canopy includes Eucalyptus tereticornis, Melaleuca quinquenervia	80%	E (obvious. Refer Images)	√
Median canopy height >10m (i.e. open woodland, woodland, forest or closed forest per Hnatiuk et al, 2009)	14.4m	Measured	√

CONDITION THRESHOLDS-PATCH SIZE CLASS

REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
Small Patch-At least 0.5 hectares	>100ha	Measured via GPS and estimated by GIS	√
Small contiguous patch- The patch is at least 0.5 ha and less than 2 ha, and is connected to a larger area of native vegetation of at least 5 ha	>100ha	Measured via GPS and estimated by GIS	√
Medium Patch-at least 2ha and less than 5ha	>100ha	Measured via GPS and estimated by GIS	√
Large Patch-at least 5ha	>100ha	Measured via GPS and estimated by GIS	√

CONDITION THRESHOLDS-VEGETATION QUALITY

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
HIGH QUALITY Predominately native understorey. Non-native species comprise less than 20% total understorey vegetation cover (all vascular species of all layers below the canopy)	~20%	Measured within 20m x 20m survey plot	X

MINIMUM REQUIREMENT	OBSERVED VALUE	MEASURED OR ESTIMATED	REQUIREMENT MET
GOOD QUALITY Mostly native understorey Non-native species comprise less than 50% of total understorey vegetation cover AND transformer species comprise less than 30% of total understorey vegetation cover	~20%	Measured within 20m x 20m survey plot	X
MODERATE QUALITY Some native understorey Non-native species comprise less than 80% of total understorey vegetation cover AND transformer species comprise less than 50% of total understorey vegetation cover	~20%	Measured within 20m x 20m survey plot	√

Minimum vegetation quality class threshold met. Therefore, EEC.

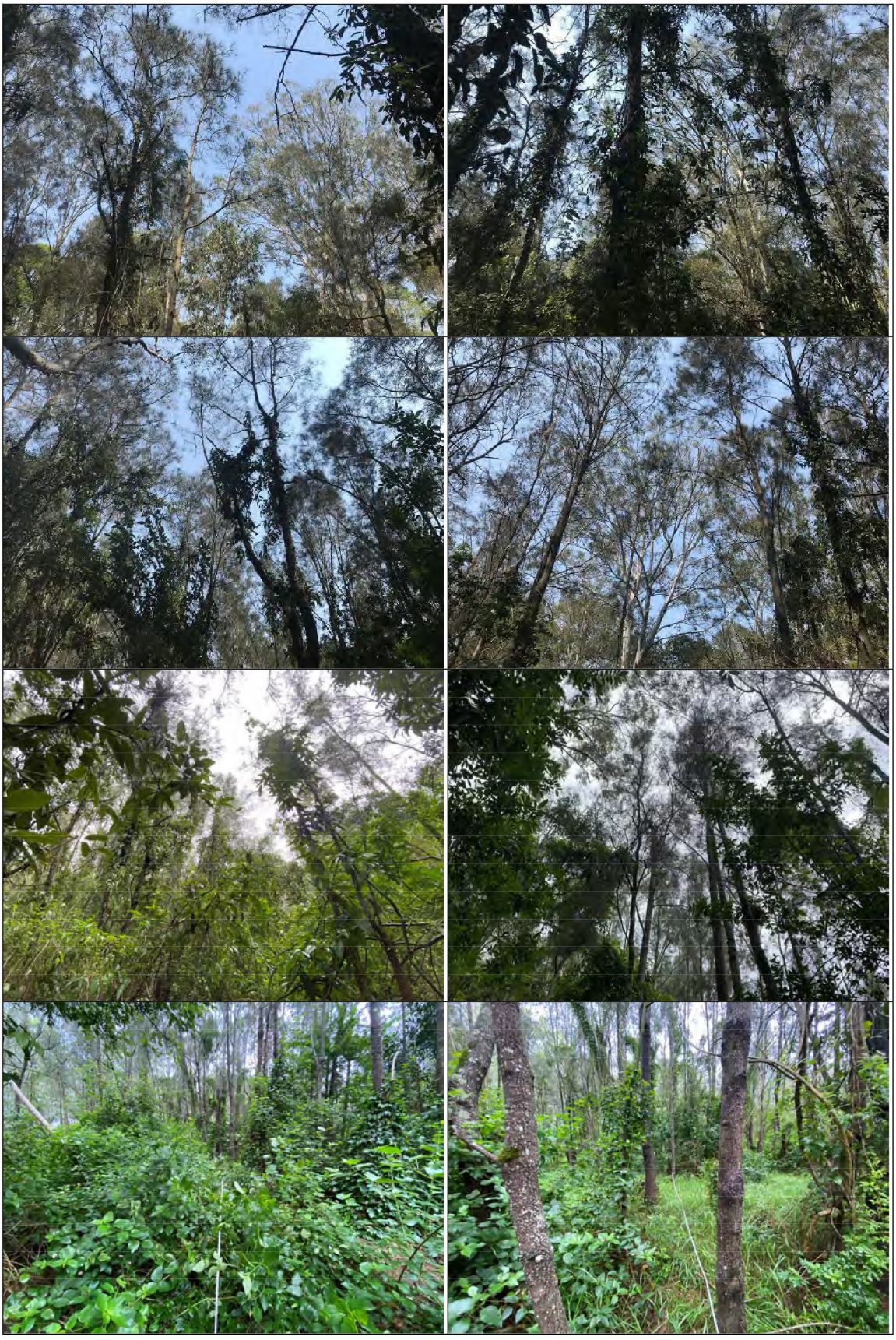
NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER %
L	Parsonsia straminae	20-50	4	10
S/T	Casuarina glauca	10-20	3	5
G	Ottochloa gracillima	100-500	3	3-4
P	Livistona australis	2	2	2
P	Archontophoenix cunninghamiana	1	1	1
T	Alphitonia excelsa	2	2	1
L	Stephania japonica	2	2	<1
F	Acrostichum speciosum	1	1	<1
	Pine needles/leaf litter			50
NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			**~20%**	

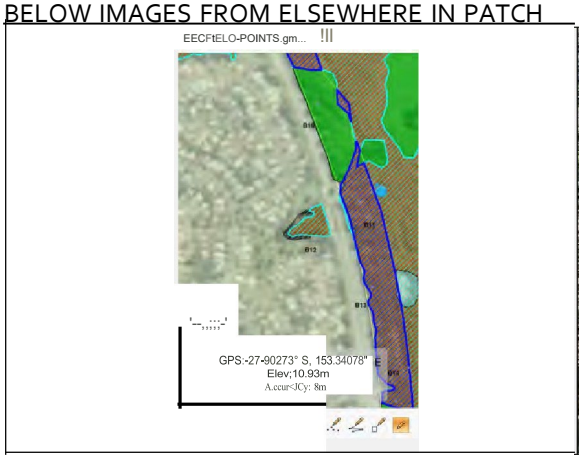
Growth form: T=tree, S=shrub, G= grass, V=sedge, R=rush, E=fern, F=forb/herb, L=vine, P=palm, O=other
Cover: <1 1,2,3,4,5,10,15,20,25,30,35, etc cover %
[0.1% cover represents an area of approximately 63 x 63cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m]
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
S/T	Senna pendula	√	20-50	5	20
S	Lantana camara	√	20-50	5	30
S/T	Schinus terebinthifolius	√	50-100	5	30
L	Ipomoea cairica	√	1	1	<1
F	Asparagus aethiopicus cv. sprengeri	√	3	2	<1
L	Passiflora suberosa		3	2	<1
NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER				**~80%**	



BELOW IMAGES FROM ELSEWHERE IN PATCH

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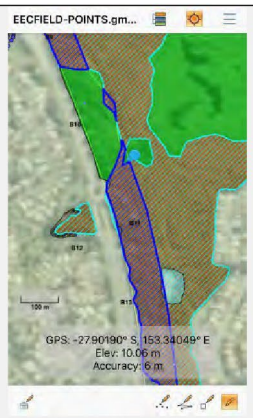
Elev: 10.16 m
Accuracy: 6 m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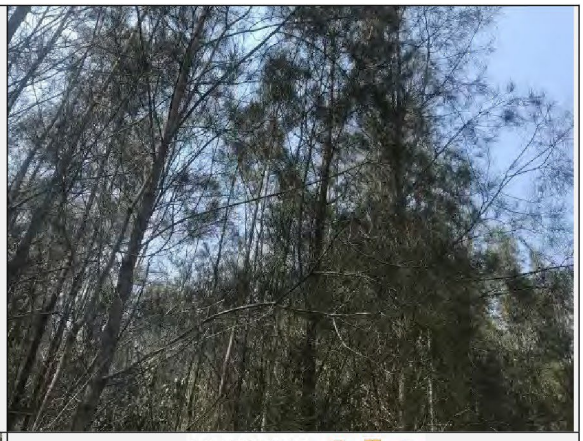

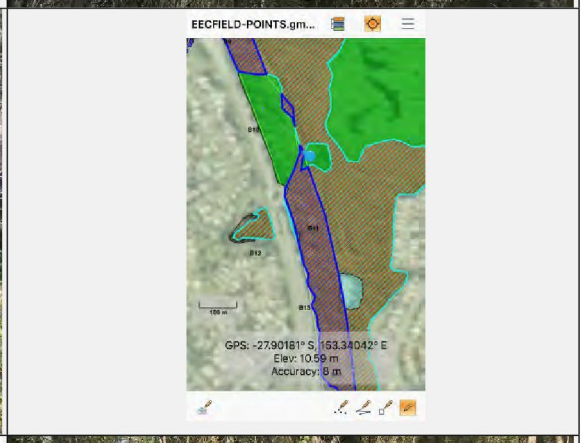
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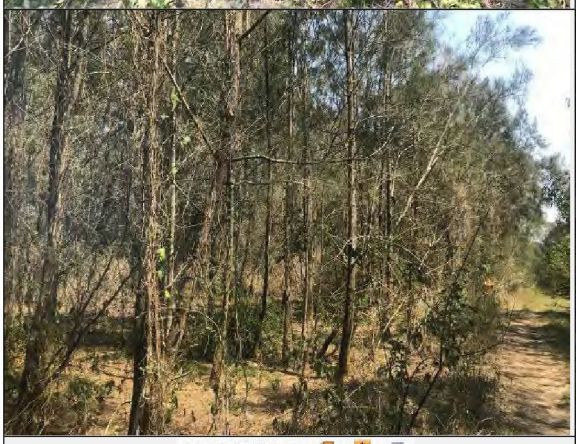

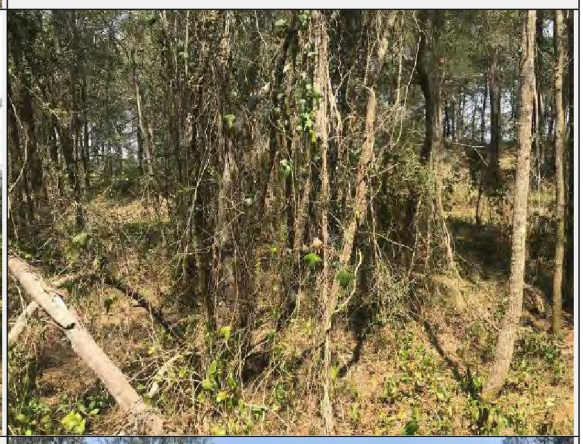

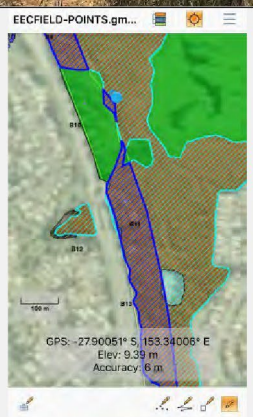
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Appendix E2: Coastal Swamp Oak TEC – summarised HQS data

3.2 IMPACT ASSESSMENT TABLES

3.2.1 Coastal Swamp Oak TEC Assessment Table

COASTAL SWAMP OAK TEC	HABITAT QUALITY SCORE = 8.33	ROUNDS TO 8/10

Assessment Unit - Regional Ecosystem	IAU1 - RE 12.1.1 Remnant									IAU2 - RE 12.1.1 Remnant									IAU3 - RE 12.1.1 Remnant/Regrowth								
Site Reference	Benchmark	SO5 Category A			SE-SO6 Category A			Average % benchmark	Average Score	Benchmark	SO17 Category A			SO18 Category A			Average % benchmark	Average Score	Benchmark	SO3 Category B			SO9 Category C			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition																												
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5	100	100	100.0	5	100	100.0	5	100.0	5	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	2	200.0	5	1	100.0	5	150.0	5	1	1	100.0	5	1	100.0	5	100.0	5	1	4	400.0	5	4	400.0	5	400.0	5
Native plant species richness - shrubs	1	1	100.0	5	1	100.0	5	100.0	5	1	2	200.0	5	2	200.0	5	200.0	5	1	1	100.0	5	1	100.0	5	100.0	5
Native plant species richness - grasses	2	1	50.0	2.5	3	150.0	5	100.0	5	2	1	50.0	2.5	1	50.0	2.5	50.0	2.5	2	2	100.0	5	2	100.0	5	100.0	5
Native plant species richness - forbs	3	8	266.7	5	6	200.0	5	233.3	5	3	6	200.0	5	3	100.0	5	150.0	5	3	5	166.7	5	2	66.7	2.5	116.7	5
Tree canopy height	12	13.8	115.0	5	13.8	115.0	5	115.0	5	12	15.1	125.8	5	13.4	111.7	5	118.8	5	12	11.8	98.3	5	14.6	121.7	5	110.0	5
Tree subcanopy height	7	6.7	95.7	5	6.8	97.1	5	96.4	5	7	6.8	97.1	5	5.8	82.9	5	90.0	5	7	5.5	78.6	5	7.1	101.4	5	90.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	10.25	107.9	5	10	108.4	5	108.2	5	9.5	10.95	115.3	5	9.6	101.1	5	108.2	5	9.5	8.65	91.1	5	10.85	114.2	5	102.6	5
Tree canopy cover (EDL)	67	68	101.5	5	70.4	105.1	5	103.3	5	67	45	67.2	5	62.6	93.4	5	80.3	5	67	87.6	130.7	5	60	89.6	5	110.1	5
Subcanopy cover	23	17.6	76.5	5	19.8	86.1	5	81.3	5	23	32.4	140.9	5	14.4	62.6	5	101.7	5	23	12.2	53.0	5	50	217.4	5	135.2	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	42.8	95.1	5	45	100.2	5	97.7	5	45	38.7	86.0	5	38.5	85.6	5	85.8	5	45	49.9	110.9	5	55	122.2	5	116.6	5
Shrub canopy cover	5	4.4	88.0	5	2.8	56.0	5	72.0	5	5	10	200.0	5	15.4	308.0	5	254.0	5	5	0	0.0	0	0	0.0	0	0.0	0
Native grass cover	85	9	10.6	1	41	48.2	1	29.4	1	85	79	92.9	5	92.6	108.9	5	100.9	5	85	37	43.5	1	4	4.7	0	24.1	1
Organic litter	5	48	960.0	3	51	1020.0	3	990.0	3	5	25	500.0	3	5.4	108.0	5	304.0	5	5	48	960.0	5	67	1340.0	5	1150.0	5
Total large trees per hectare	92	55	59.8	10	50	54.3	10	57.1	10	92	85	92.4	10	30	32.6	5	62.5	10	92	95	103.3	15	50	54.3	10	78.8	10
Coarse woody debris (m/ha)	360	200	55.6	5	185	51.4	5	53.5	5	360	140	38.9	2	395	109.7	5	74.3	5	360	136	37.8	2	216	60.0	5	48.5	2
Non-native plant cover	0	4		10	2		10	3.0	10	0	2		10	2		10	2	10	0	30		5	75		0	52.5	0
Site Condition Score				66.5			69		69.0				67.5			65.5		68.5				59			50.5		51.0
MAX Site Condition Score				*80*			*80*		*80*				*80*			*80*		*80*				*80*			*80*		*80*
Site Context				Score			Score		Average Score				Score			Score		Average Score				Score			Score		Average Score
Size of patch (ha)				10			10		10				5			5		5				0			10		5
Connectivity				5			5		5				2			2		2				2			5		4
Context				4			4		4				4			4		4				4			4		4
Site Context Score				19			19		19.0				11			11		11				6			19		13
MAX Site Context Score				*20*			*20*		*20*				*20*			*20*		*20*				*20*			*20*		*20*
Total habitat quality score /100				**85.50**			**88.00**		**88.00**				**78.50**			**76.50**		**79.50**				**65.00**			**69.50**		**64.00**
MAX Habitat Quality Score				*100*			*100*		*100*				*100*			*100*		*100*				*100*			*100*		*100*

Final habitat quality score (weighted)	IAU1	IAU2	IAU3	Final
Habitat Quality Score (measured /100)	88.00	79.50	64.00	77.17
Habitat Quallity Score (max)	100	100	100	100
Assessment Unit area (ha)	11.75	0.4667	2.798	15.01
Assessment Unit Habitat Quality Score /10	8.80	7.95	6.40	7.72
Size Weighting	0.78	0.03	0.19	
Weighted Habitat Quality Score	***6.89***	***0.25***	***1.19***	***8.33***

Physical impact = 15.01 ha and an additional functional loss impact = 0.918 ha. Total impact = 15.928 ha

From the Offset Assessment Guide, quantum of impact for Coastal Swamp Oak TEC = 15.928 x 0.8 = 12.74 ha

Appendix F: Impact Site Survey Data

Appendix F1: Koala habitat

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.24 ASSESSMENT UNIT 1 (IAU1-AU1)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	23/03/2021

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU1-AU1 12.11.24	13.95	12.11.24	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum			Zone	Easting	Northing
WGS 84	☐	0m Mark	56	533569	6912270
GDA 94	☑		Zone	Easting	Northing
		50m Mark	56	533563	6912323
Plot bearing			356	Recorders	TR / SS

Site description and Location (including details of discrete polygons within the assessment unit)
Eucalyptus siderophloia, Corymbia intermedia and Angophora leiocarpa dominant. Flora Field Sheet B22.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	8		
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus tindaliae*	Common Name	
Scientific Name	*Lophostemon suaveolens*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Jagera pseudorhus*	Common Name	
Scientific Name	*Syzygium luehmannii*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Oplismenus aemulus*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Lepidosperma laterale*	Scientific Name	
Scientific Name	*Pteridium esculentum*	Scientific Name	
Scientific Name	*Lomandra longifolia*	Scientific Name	
Scientifi Name	*Lobelia purpurascens*	Scientific Name	
Scientific Name	*Goodenia rotundifolia*	Scientific Name	
Scientific Name	*Geodorum densiflorum*	Scientific Name	
Scientific Name	*Eustrephus latifolius*	Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	3.00%		
Common Name	*Lantana camara*	Common Name	
Common Name	*Schefflera actinophylla*	Common Name	
Common Name	*Asparagus aethiopicus*	Common Name	
Common Name	*Ornamental species*	Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	541.00		
1	3.00	26	
2	2.40	27	
3	2.20	28	
4	2.00	29	
5	1.00	30	
6	2.60	31	
7	1.50	32	
8	4.20	33	
9	3.60	34	
10	1.80	35	
11	4.40	36	
12	16.00	37	
13	1.40	38	
14	4.40	39	
15	3.60	40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	2.00%	5.00%	8.00%	1.00%	4.20%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	98.00%	95.00%	92.00%	99.00%	95.80%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	10	Number of large non eucalypt trees:	1
Total Number Large Trees:	11		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.00%	Sub-canopy:	11.00%	Emergent:	
Shrub canopy cover %	6.90%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	5 - >200ha	4 - >75% or >500ha connection	3 - >30-75% remnant		3 - Within (whole or part)
SCORE	10	5	4		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.24 ASSESSMENT UNIT 1 (IAU1-AU2)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	19.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU1-AU2 12.11.24	13.95	12.11.24	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum			Zone	Easting	Northing
WGS 84	☐	0m Mark	56	53454	6913599
GDA 94	☑	50m Mark	Zone	Easting	Northing
				533436	6913645
Plot bearing			334	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Eucalyptus siderophloia, Lophostemon confertus and Corymbia intermedia dominnant. Flora field sheet B10.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	6		
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Desmodium rhytidophyllum*	Scientific Name	*Eustrephus latifolius*
Scientific Name	*Lomandra longifolia*	Scientific Name	
Scientific Name	*Goodenia rotundifolia*	Scientific Name	
Scientific Name	*Dianella caerulea*	Scientific Name	
Scientific Name	*Pteridium esculentum*	Scientific Name	
Scientific Name	*Glycine clandestina*	Scientific Name	
Scientific Name	*Marsdenia rostrata*	Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Asparagus aethiopicus*	Common Name	
Scientific Name	*Ochna serrulata*	Common Name	
Scientific Name	*Syagrus romanzoffiana*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	470.00		
1	5.00	26	
2	1.00	27	
3	3.00	28	
4	10.00	29	
5	0.50	30	
6	2.50	31	
7	4.00	32	
8	8.00	33	
9	1.50	34	
10	5.00	35	
11	5.00	36	
12	1.50	37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	2.00%	5.00%	1.00%	15.00%	10.00%	6.60%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	98.00%	95.00%	99.00%	85.00%	90.00%	93.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	28	Number of large non eucalypt trees:	2
Total Number Large Trees:	30		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	66.30%	Sub-canopy:	16.30%	Emergent:	
Shrub canopy cover %	6.60%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	5 - >200ha	4 - >75% or >500ha connection	3 - >30-75% remnant		3 - Within (whole or part)
SCORE	10	5	4		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.25 ASSESSMENT UNIT 2 (IAU2-AU3)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	4/07/2021

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU2-AU3 12.11.25	10.28	12.11.25	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534834	6906637
GDA 94 ☑	50m Mark	56	534796	6906650
Plot bearing		280	Recorders	TR

Site description and Location (including details of discrete polygons within the assessment unit)
Corymbia intermedia, C. henryii, Eucalyptus seeana and E. tindaliae co-dominant. Flora field sheet CC11.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	13		
Scientific Name	*Corymbina intermedia*	Scientific Name	*Lophostemon suaveolens*
Scientific Name	*Eucalyptus propinqua*	Scientific Name	*Lophostemon confertus*
Scientific Name	*Eucalyptus crebra*	Scientific Name	*Allocasuarina littoralis*
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Eucalyptus microcorys*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Eucalyptus pilularis*	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Acacia leiocalyx*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name		Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	10		
Scientific Name	*Geodorum densiflorum*	Scientific Name	*Chrysocephalum apiculatum*
Scientific Name	*Pteridium esculentum*	Scientific Name	*Goodenia rotundifolia*
Scientific Name	*Lomandra filiformis*	Scientific Name	*Glycine clandestina*
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Asparagus aethiopicus*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name	*Gomphocarpus physocarpus*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Schefflera actinophylla*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	470.00		
1	4.00	26	
2	2.00	27	
3	1.00	28	
4	3.00	29	
5	10.00	30	
6	2.00	31	
7	5.00	32	
8	0.50	33	
9	1.50	34	
10	2.00	35	
11	4.00	36	
12	2.00	37	
13	1.00	38	
14	6.00	39	
15	3.00	40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	75	Quadrat 5	Average
	40.00%	10.00%	2.00%	0.00%	30.00%	16.40%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	60.00%	90.00%	98.00%	100.00%	70.00%	83.60%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	31	Number of large non eucalypt trees:	7
Total Number Large Trees:	38		

Median Tree Canopy Height Measurements	Canopy:	20.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	75

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	36.40%	Sub-canopy:	52.30%	Emergent:	
Shrub canopy cover %	15.80%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

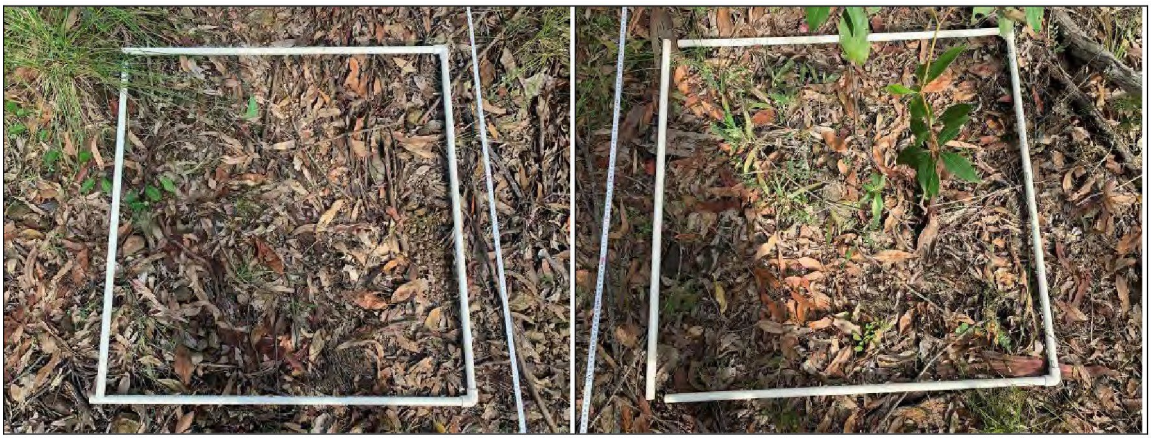
Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	3 - 26 - 100ha	1 -0% - 10% connection	2 - >10% to 30% remna		3 - Within (whole or part)
SCORE	5	0	2		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00



HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.25 ASSESSMENT UNIT 2 (IAU2-AU4)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	8.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU2-AU4 12.11.25	10.28	12.11.25	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534205	6907702
GDA 94 ☑		Zone	Easting	Northing
	50m Mark		534229	6907663
Plot bearing		145	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by Corymbia henryii. Flora field sheet CC18.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	7		
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Eucalyptus crebra*	Common Name	
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Leptospermum polygalifolium*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Cymbopgon refractus*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	9		
Scientific Name	*Lepidosperma laterale*	Common Name	*Parsonsia straminea*
Scientific Name	*Geodorum densiflorum*	Common Name	*Glycine clandestina*
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Lomandra filiformis*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	1.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	1260.00		
1	2.50	26	10.00
2	0.50	27	5.00
3	6.50	28	2.00
4	5.50	29	8.00
5	4.00	30	2.00
6	2.00	31	3.00
7	2.00	32	5.00
8	1.00	33	2.00
9	1.00	34	
10	2.00	35	
11	5.00	36	
12	11.00	37	
13	4.50	38	
14	1.00	39	
15	8.00	40	
16	5.00	41	
17	1.50	42	
18	4.00	43	
19	1.00	44	
20	2.00	45	
21	3.00	46	
22	8.00	47	
23	2.00	48	
24	3.00	49	
25	3.00	50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	1.00%	1.00%	2.00%	2.00%	5.00%	2.20%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	98.00%	95.00%	96.00%	95.00%	93.00%	95.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	58	Number of large non eucalypt trees:	4
Total Number Large Trees:	62		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	8.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	45.90%	Sub-canopy:	32.00%	Emergent:	
Shrub canopy cover %	16.70%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	3 - 26 - 100ha	2 - >10% - <50%	2 - >10% to 30% remna		3 - Within (whole or part)
SCORE	5	2	2		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.23 ASSESSMENT UNIT 3 (IAU3-AU5)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	8.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU3-AU5 12.11.23	7.655	12.11.23	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534087	6907769
GDA 94 ☑	50m Mark	Zone	Easting	Northing
			534097	6907720
Plot bearing		170	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Co-dominated by Eucalyptus pilularis and Corymbia henryii. Flora field sheet CC20/22.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	9		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Eucalyptus tindaliae*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus crebra*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	3		
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Ottochla gracillima*	Common Name	
Scientific Name	*Cynodon dactlyon*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Lomandra filiformis*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Goodenia rotundiflora*	Common Name	
Scientific Name	*Geodorum densiflorum*	Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name	*Ageratina adenophora*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	855.00		
1	6.00	26	
2	9.00	27	
3	4.50	28	
4	4.00	29	
5	1.00	30	
6	4.00	31	
7	3.00	32	
8	4.00	33	
9	1.00	34	
10	10.00	35	
11	4.00	36	
12	3.00	37	
13	1.00	38	
14	6.00	39	
15	4.00	40	
16	15.00	41	
17	3.00	42	
18	2.00	43	
19	1.00	44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	0.00%	20.00%	5.00%	2.00%	6.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	50.00%	75.00%	90.00%	96.00%	81.20%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	47	Non- Eucalypt Large tree DBH benchmark used:	27
Number of large eucalypt trees:	35	Number of large non eucalypt trees:	3
Total Number Large Trees:	38		

Median Tree Canopy Height Measurements	Canopy:	21.00	Sub-canopy:	7.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.80%	Sub-canopy:	6.00%	Emergent:	
Shrub canopy cover %	15.00%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	3 - 26 - 100ha	2 - >10% - <50%	2 - >10% to 30% remna		3 - Within (whole or part)
SCORE	5	2	2		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.23 ASSESSMENT UNIT 3 (IAU3-AU6)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	19.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU3-AU6 12.11.23	7.655	12.11.23	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534124	6907041
GDA 94 ☑	50m Mark	Zone	Easting	Northing
			534151	6907003
Plot bearing		116	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by Eucalyptus pilularis. Small drainage line around the 80m mark. Flora field sheet CC13.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	7		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Lophostemon suaveolens*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	4		
Scientific Name	*Melaleuca bracteata*	Common Name	
Scientific Name	*Melaleuca salicina*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Hovea acutifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Dianella caerulea*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	1270.00		
1	14.00	26	
2	15.00	27	
3	24.00	28	
4	1.00	29	
5	2.00	30	
6	6.00	31	
7	4.00	32	
8	10.00	33	
9	20.00	34	
10	3.00	35	
11	2.00	36	
12	1.00	37	
13	3.00	38	
14	8.00	39	
15	2.00	40	
16	0.50	41	
17	1.50	42	
18	3.00	43	
19	2.00	44	
20	3.00	45	
21	2.00	46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	2.00%	40.00%	5.00%	0.00%	10.00%	11.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	80.00%	60.00%	50.00%	95.00%	90.00%	75.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	47	Non- Eucalypt Large tree DBH benchmark used:	27
Number of large eucalypt trees:	19	Number of large non eucalypt trees:	5
Total Number Large Trees:	24		

Median Tree Canopy Height Measurements	Canopy:	24.00	Sub-canopy:	12.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	39.50%	Sub-canopy:	10.00%	Emergent:	
Shrub canopy cover %	9.50%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	2 - 5 - 25ha	2 - >10% - <50%	2 - >10% to 30% remna		3 - Within (whole or part)
SCORE	2	2	2		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU7)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	21.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU7 REGROWTH 12.3.11	3.347	12.3.11 REGROWTH	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum					
WGS 84 ☐	0m Mark	Zone	Easting	Northing	
GDA 94 ☑		56	532493	6917493	
	50m Mark	Zone	Easting	Northing	
		56	532479	6917528	
Plot bearing			Recorders	TR	

Site description and Location (including details of discrete polygons within the assessment unit)
Blue Gum with weed lower strata. Small drain. Flora field sheet CC-21-J.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	2		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	0		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*cyperus spp*	Common Name	
Scientific Name	*Parsonsia straminae*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	95.00%		
Scientific Name	*Singapore daisy*	Common Name	
Scientific Name	*Blue Billygoat Weed*	Common Name	
Scientific Name	*Columbian Waxweed*	Common Name	
Scientific Name	*Cobblers Pegs*	Common Name	
Scientific Name	*Devils Fig*	Common Name	
Scientific Name	*Cocos Palm*	Common Name	
Scientific Name	*Pigeon Grass*	Common Name	
Scientific Name	*Balloon Cotton*	Common Name	
Scientific Name	*Latana*	Common Name	
Scientific Name	*Silverleaf Desmodium*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	20.00		
1	0.50	26	
2	1.50	27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	15.00%	0.00%	35.00%	12.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	49	Non- Eucalypt Large tree DBH benchmark used:	36
Number of large eucalypt trees:	2	Number of large non eucalypt trees:	0
Total Number Large Trees:	2		

Median Tree Canopy Height Measurements	Canopy:	18.00	Sub-canopy:	8.00	Emergent:	

Number of ecologically dominant layer species regenerating:	33

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	18.00%	Sub-canopy:	8.00%	Emergent:	
Shrub canopy cover %	0.00%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	1 - <5ha	1 - 0% - 10% connection	1 - <10% remnant		2 - Sharing a common boundary
SCORE	0	0	0		4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU8)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	21.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU8 REGROWTH 12.3.20	3.347	12.3.20 REGROWTH	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		0m Mark	Zone	Easting	Northing
WGS 84	☐		56	532982	6914745
GDA 94	☑	50m Mark	Zone	Easting	Northing
			56	533030	6914753
Plot bearing		63	Recorders	TR	

Site description and Location (including details of discrete polygons within the assessment unit)
Wattle dominated with Swamp Oak and Euclaypt Regrowth. Flora field sheet B26.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	10		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name	*Corymbia tessellaris*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Corymbia intermeida*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Acacia podalyriifolia*	Common Name	
Scientific Name	*Acacia leiocalyx*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	2		
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	4		
Scientific Name	*Parsonsia straminae*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Zig zag wattle*	Common Name	rhodes grass
Scientific Name	*wattle*	Common Name	singapore daisy
Scientific Name	*lantana*	Common Name	Elastic grass
Scientific Name	*passionflower*	Common Name	
Scientific Name	*asparagus fern*	Common Name	
Scientific Name	*cocos palm*	Common Name	
Scientific Name	*slash pine*	Common Name	
Scientific Name	*yucca*	Common Name	
Scientific Name	*pigeon grass*	Common Name	
Scientific Name	*paspalum/vasey grass*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	200.00		
1	4.00	26	
2	2.50	27	
3	1.50	28	
4	2.00	29	
5	1.00	30	
6	5.00	31	
7	1.00	32	
8	3.00	33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	65.00%	85.00%	90.00%	75.00%	70.00%	77.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	30	Non- Eucalypt Large tree DBH benchmark used:	30
Number of large eucalypt trees:	23	Number of large non eucalypt trees:	8
Total Number Large Trees:	31		

Median Tree Canopy Height Measurements	Canopy:	16.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	13.00%	Sub-canopy:	83.00%	Emergent:	
Shrub canopy cover %	7.80%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	1 - <Sha	2 - >10% - <50%	3 - >30-75% remnant		2 - Sharing a common boundary
SCORE	0	2	4		4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU9)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	29-4-21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU9 REMNANT 12.3.11	3.347	12.3.11	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	533689	6909494
GDA 94 ☑	50m Mark	Zone	Easting	Northing
		56	533711	6909579
Plot bearing			Recorders	TR & KK

Site description and Location (including details of discrete polygons within the assessment unit)
Proximate to Coombabah Creek. Subject to minor ponding. Blue Gum and Swamp Oak co-dominant species with Wattle regrowth also common.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	10		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus microcorys*	Common Name	
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Myrsine variabilis*	Common Name	

Shrub species richness:			
Total number of species	7		
Scientific Name	*Ficus watkinsiana*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Macaranga tanarius*	Common Name	
Scientific Name	*Glochidion sumatranum*	Common Name	
Scientific Name	*Cryptocarya triplinervis*	Common Name	
Scientific Name	*Leptospermum polygalifolium*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Oplismenus aemulus*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Goodenia rotundifolia*	Scientific Name	*Persicaria attenuata*
Scientific Name	*Maclura cochinchinensis*	Scientific Name	*Pseuderanthemum variabile*
Scientific Name	*Parsonsia straminea*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Hardenbergia violacea*	Common Name	
Scientific Name	*Smilax australis*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	25.00%		
Scientific Name	*Mangifera indica*	Scientific Name	*Solanum nigrum*
Scientific Name	*Lantana camara*	Scientific Name	*Asparagus virgatus*
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Ageratina adenophora*	Common Name	
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name	*Ageratum houstonianum*	Common Name	
Scientific Name	*Setaria sphacelata*	Common Name	
Scientific Name	*Senecio madagascariensis*	Common Name	
Scientific Name	*Cuphea carthagenensis*	Common Name	
Scientific Name	*Solanum torvum*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	60.00		
1	1.00	26	
2	4.00	27	
3	1.00	28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	40.00%	5.00%	96.00%	0.00%	15.00%	31.20%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	15.00%	75.00%	2.00%	10.00%	80.00%	36.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	49	Non- Eucalypt Large tree DBH benchmark used:	36
Number of large eucalypt trees:	14	Number of large non eucalypt trees:	2
Total Number Large Trees:	16		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	12.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	51.50%	Sub-canopy:	36.00%	Emergent:	
Shrub canopy cover %	12.50%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Part J - Site Context Score

ATTRIBUTE	Size of Patch	Connectedness	Context	Distance to Permanent Water	Ecological Corridors
DESCRIPTION	4 - 101-200ha	3 - 50%-75% connection	2 - >10% to 30% remna		3 - Within (whole or part)
SCORE	7	4	2		6

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
2	Site Context Attributes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		12. Connectedness (fragmented)	5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		13. Context (fragmented)	4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		14. Distance from water (intact)									
		15. Ecological corridors	6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

Appendix F2: Koala habitat – summarised HQS data

3.2.2 Koala Impact Assessment Table

KOALA | **HABITAT QUALITY SCORE = 7.42** | **ROUNDS TO 7/10**

Assessment Unit - Regional Ecosystem	IAU-1 RE12.11.24 Remnant									IAU-2 RE12.11.25 Remnant										IAU-3 RE12.11.23 Remnant										IAU-4 RE 12.3.11/20 Remnant									
Site Reference	Benchmark	Plot 1			Plot 2			Average % benchmark	Average Score	Benchmark	Plot 3			Plot 4			Average % benchmark	Average Score	Benchmark	Plot 5			Plot 6			Average % benchmark	Average Score	Benchmark	Plot 7			Benchmark	Plot 8			Benchmark	Plot 9			Average % benchmark	Average Score
	12.11.24	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.25	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.23	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.3.11	Raw Data	% Benchmark	Score	12.3.20	Raw Data	% Benchmark	Score	12.3.11	Raw Data	% Benchmark	Score		
Site Condition																																								
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5	100	75	75.0	3	100	100.0	5	87.5	5	100	100	100.0	5	100	100.0	5	100.0	5	100	33	33.0	3	100	100	100.0	5	100	100	100.0	5	77.7	5
Native plant species richness - trees	10	8	80.0	2.5	6	60.0	2.5	70.0	2.5	7	13	185.7	5	7	100.0	5	142.9	5	8	9	112.5	5	7	87.5	2.5	100.0	5	7	2	28.6	2.5	4	10	250.0	5	7	10	142.9	5	140.5	5
Native plant species richness - shrubs	8	6	75.0	2.5	5	62.5	2.5	68.8	2.5	8	5	62.5	2.5	6	75.0	2.5	68.8	2.5	12	3	25.0	2.5	4	33.3	2.5	29.2	2.5	7	0	0.0	0	4	5	125.0	5	7	7	100.0	5	75.0	2.5
Native plant species richness - grasses	5	3	33.3	2.5	3	33.3	2.5	33.3	2.5	5	4	44.4	2.5	3	33.3	2.5	38.9	2.5	5	4	80.0	5	4	80.0	2.5	80.0	2.5	12	0	0.0	0	2	2	100.0	5	12	3	25.0	2.5	41.7	2.5
Native plant species richness - forbs	17	7	41.2	2.5	8	47.1	2.5	44.1	2.5	13	10	76.9	2.5	9	69.2	2.5	73.1	2.5	15	6	40.0	2.5	5	33.3	2.5	36.7	2.5	25	3	12.0	0	8	4	50.0	2.5	25	8	32.0	2.5	31.3	2.5
Tree canopy height	26	22	84.6	5	22.0	84.6	5	84.6	5	22	20	90.9	5	22	100.0	5	95.5	5	29	21	72.4	5	24	82.8	5	77.6	5	23	18	78.3	5	16	16	100.0	5	23	22	95.7	5	91.3	5
Tree subcanopy height	10	10	100.0	5	10.0	100.0	5	100.0	5	9	10	111.1	5	8	88.9	5	100.0	5	10	7	70.0	5	12	120.0	5	95.0	5	8	8	100.0	5	8	10	125.0	5	8	12	150.0	5	125.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	18	16.0	88.9	5	16.0	88.9	5	88.9	5	15.5	15.0	96.8	5	15	96.8	5	96.8	5	19.5	14	71.8	5	18	92.3	5	82.1	5	15.5	13	83.9	5	12	13	108.3	5	15.5	17	109.7	5	100.6	5
Tree canopy cover (EDL)	72	55	76.4	5	66.3	92.1	5	84.2	5	40	36.4	91.0	5	45.9	114.8	5	102.9	5	63	55.8	88.6	5	39.5	62.7	5	75.6	5	56	18	32.1	2	70	13	18.6	2	56	51.5	92.0	5	47.6	2
Subcanopy cover	43	11	25.6	2	16.3	37.9	2	31.7	2	5	52.3	1046.0	5	32	640.0	5	843.0	3	8	6	75.0	5	10	125.0	5	100.0	5	33	8	24.2	2	20	83	415.0	3	33	36	109.1	5	182.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	57.5	33	57.4	5	41.3	71.8	5	64.6	5	22.5	44.4	197.1	5	39.0	173.1	5	185.1	5	35.5	30.9	87.0	5	24.75	69.7	5	78.4	5	44.5	13	29.2	2	45	48	106.7	5	44.5	43.75	98.3	5	78.1	5
Shrub canopy cover	7	6.9	98.6	5	6.6	94.3	5	96.4	5	4	15.8	395.0	5	16.7	417.5	5	406.3	3	12	15	125.0	5	9.5	79.2	5	102.1	5	20	0	0.0	0	15	7.8	52.0	5	20	12.5	62.5	5	38.2	3
Native grass cover	39	4.2	10.8	1	6.6	16.9	1	13.8	1	20	16.4	82.0	3	2.2	11.0	1	46.5	1	21	6.4	30.5	1	11.4	54.3	3	42.4	1	44	0	0.0	0	20	5.0	25.0	1	44	31.2	70.9	3	32.0	1
Organic litter	45	95.8	212.9	3	93.4	207.6	3	210.2	3	65	83.6	128.6	5	95.4	146.8	5	137.7	5	56	81.2	145.0	5	75	133.9	5	139.5	5	37	12	32.4	3	30	77	256.7	3	37	36.4	98.4	5	129.2	5
Number of large trees (ha)	33	11	33.3	5	30.0	90.9	10	62.1	10	23	38	165.2	15	62	269.6	15	217.4	15	14	38	271.4	15	24	171.4	15	221.4	15	30	2	6.7	5	165	31	18.8	5	30	16	53.3	10	26.3	5
Coarse woody debris (m/ha)	546	541	99.1	5	470.0	86.1	5	92.6	5	100	470	470.0	2	1260	1260.0	2	865.0	2	480	855	178.1	5	1270	264.6	2	221.4	2	555	20	3.6	0	890	200.0	22.5	2	555	60	10.8	2	12.3	2
Non-native plant cover	0	3		10	5.0		5	4.0	10	0	2		10	1		10	1.5	10	0	10		5	2		10	6.0	5	0	95		0	0	10		5	0	25		5	43.3	3
Quality and availability of food and foraging habitat: Koala				5			5		5				10			10		10.0				5			10	7.5					1				1				5		2.3
Quality and availability of shelter: Koala				10			10		10				10			10		10.0				10			10	10					1				1				10		4
Site Condition Score				69			69		74				83.5			83.5		83.50				81			85	78					22.5				55.5				75		52.8
MAX Site Condition Score				*100*			*100*		*100*				*100*			*100*		*100*				*100*			*100*	*100*					*100*				*100*				*100*		*100*
Site Condition Score - out of 3				**2.07**			**2.07**		**2.22**				**2.51**			**2.51**		**2.51**				**2.43**				**2.34**					**0.68**				**1.67**				**2.25**		**1.59**
Site Context			Value	Score		Value	Score	Average	Average Score			Value	Score		Value	Score	Average	Average score			Value	Score		Value	Score	Average	Average Score			Value	Score			Value	Score			Value	Score	Average	Average Score
Size of patch (ha)																																									
Koala habitat (foraging/breeding/dispersal)			49	5		13.24	2	31.1	5			443.88	10		28.07	5	236.0	10			28.07	5		443.88	10	235.98	10			74.45	5			70.44	5			70.44	5	71.78	5
Connectivity																																									
Foraging/breeding habitat			0.0			6.63		3.3				14.95			48.23		31.6				21.79			30.84		26.31				0.00				0.00				0.00		0.00	
Dispersal habitat			100.0	2		93.37	2	96.7	2			85.03	2		22.16	2	53.6	2			49.69	2		69.16	2	59.42	2			100.00	2			100.00	2			94.64	2	98.21	2
Context																																									
Foraging/breeding habitat			4.27			1.56		2.9				23.25			20.95		22.1				19.58			30.91		25.25				2.70				3.18				12.75		6.21	
Dispersal habitat			57.85	2		58.84	2	58.3	2			71.54	4		69.47	4	70.5	4			70.87	4		61.22	4	66.05	4			38.85	2			72.86	2			79.60	4	63.77	2
Ecological Corridors				6			6		6				6			6		6				6			6	6				4				4				6		4.0
Role of site location to species overall population in the state				5			5		5				5			5		5				5			5	5				5				5				5		5.0
Absence of threats *				5			5		5				5			5		5				5			5	5				0				1				4		0.0
Species mobility capacity				7			7		7				10			10		10				10			10	10				4				10				10		7.0
Site Context Score				32			29		30.5				42			37		39.5				37			42	39.5				13				29				36		26
MAX Site Context Score				*56*			*56*		*56*				*56*			*56*		*56*				*56*			*56*	*56*				*56*				*56*				*56*		*56*
Site Context Score - out of 3				**1.71**			**1.55**		**1.63**				**2.25**			**1.98**		**2.12**				**1.98**			**2.25**	**2.12**				**0.70**				**1.55**				**1.93**		**1.39**

	IAU-1 RE12.11.24 Remnant									IAU-2 RE12.11.25 Remnant										IAU-3 RE12.11.23 Remnant										IAU-4 RE 12.3.11/20 Remnant									
	Koala density	Plot 1			Plot 2			Average		Koala density	Plot 3			Plot 4			Average		Koala density	Plot 5			Plot 6			Average		Koala density	Plot 7				Plot 8				Plot 9			Average	
Species Stocking Rate (SSR) **	0.23/ha			Score			Score	Score		0.23/ha			Score			Score	Score		0.23/ha			Score			Score	Score		0.23/ha			Score				Score			Score	Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10					10			10	10					10			10	10					10				10			10	10	
Species usage of the site (habitat type & evidenced usage)				15			15	15					15			15	15					15			15	15					15				15			15	15	
Approximate density (per ha)	1.25			30			30	30		0.46			30			30	30		0.23			30			30	30		1.39			30				30			30	30	
Role/importance of species population on site				5			5	5					5			5	5					5			5	5					5				5			5	5	
Total SRR score (out of 70)				60			60	60					60			60	55					60			60	60					60				60			60	60	
Max SRR Score				70			70	70					70			70	70					70			70	70					70				70			70	70	
SRR Score (out of 4)				**3.43**			**3.43**	**3.43**					**3.43**			**3.43**	**3.14**					**3.43**			**3.43**	**3.43**					**3.43**				**3.43**			**3.43**	**3.43**	

Final habitat quality score (weighted)	IAU-1 RE12.11.24 Remnant	IAU-2 RE12.11.25 Remnant	IAU-3 RE12.11.23 Remnant	IAU-4 RE 12.3.11/20 Remnant	Final
Site Condition score (out of 3)	2.22	2.51	2.34	1.59	*2.16*
Site Context Score (out of 3)	1.63	2.12	2.12	1.39	*1.81*
Species Stocking Rate Score (out of 4)	3.43	3.14	3.43	3.43	*3.36*
Habitat Quality score (out of 10)	*7.28*	*7.76*	*7.88*	*6.41*	*7.33*
Impact Assessment Unit area (ha)	27.9	20.56	15.31	10.04	*73.81*
Total impact area (ha) for this MNES	73.81	73.81	73.81	73.81	
Size Weighting	0.378	0.279	0.207	0.136	
Weighted Habitat Quality Score	***2.75***	***2.16***	***1.64***	***0.87***	*7.42*

From the Offset Assessment Guide, quantum of impact for Koala = 73.81 ha x 0.7 = 51.67 ha

* Absence of threats re-scored using BAAM threat scoring table applied at offset sites

** Stocking rate scoring amended from original impact habitat quality assessment to match offset scoring method

Appendix G: Impact Site Survey Data

Appendix G1: GHFF habitat

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.24 ASSESSMENT UNIT 1 (IAU1-AU1)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	23/03/2021

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU1-AU1 12.11.24	11.66	12.11.24	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum			Zone	Easting	Northing
WGS 84	☐	0m Mark	56	533569	6912270
GDA 94	☑		Zone	Easting	Northing
		50m Mark	56	533563	6912323
Plot bearing			356	Recorders	TR / SS

Site description and Location (including details of discrete polygons within the assessment unit)
Eucalyptus siderophloia, Corymbia intermedia and Angophora leiocarpa dominant. Flora Field Sheet B22.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	8		
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus tindaliae*	Common Name	
Scientific Name	*Lophostemon suaveolens*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Jagera pseudorhus*	Common Name	
Scientific Name	*Syzygium luehmannii*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Oplismenus aemulus*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	7		
Scientific Name	*Lepidosperma laterale*	Scientific Name	
Scientific Name	*Pteridium esculentum*	Scientific Name	
Scientific Name	*Lomandra longifolia*	Scientific Name	
Scientifi Name	*Lobelia purpurascens*	Scientific Name	
Scientific Name	*Goodenia rotundifolia*	Scientific Name	
Scientific Name	*Geodorum densiflorum*	Scientific Name	
Scientific Name	*Eustrephus latifolius*	Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	3.00%		
Common Name	*Lantana camara*	Common Name	
Common Name	*Schefflera actinophylla*	Common Name	
Common Name	*Asparagus aethiopicus*	Common Name	
Common Name	*Ornamental species*	Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	
Common Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	541.00		
1	3.00	26	
2	2.40	27	
3	2.20	28	
4	2.00	29	
5	1.00	30	
6	2.60	31	
7	1.50	32	
8	4.20	33	
9	3.60	34	
10	1.80	35	
11	4.40	36	
12	16.00	37	
13	1.40	38	
14	4.40	39	
15	3.60	40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	2.00%	5.00%	8.00%	1.00%	4.20%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	98.00%	95.00%	92.00%	99.00%	95.80%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	10	Number of large non eucalypt trees:	1
Total Number Large Trees:	11		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.00%	Sub-canopy:	11.00%	Emergent:	
Shrub canopy cover %	6.90%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU-1 AU1	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Lophostemon confertus	0.46	1	0
Angophora leiocarpa	0.35	1	0
Eucalyptus siderophloia	0.81	1	1
Corymbia intermedia	0.86	1	1
Eucalyptus tereticornis	0.88	1	1
Eucalyptus tindaliae	0	0	0
Lophostemon suaveolens	0	0	0
Corymbia citriodora	0.65	1	1
TOTAL	4.01	6	4
AVERAGE	0.50125		
ATTRIBUTE SCORE	5	15	10

IAU-1 AU1	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Lophostemon confertus	0.46	27
Angophora leiocarpa	0.35	8
Eucalyptus siderophloia	0.81	13
Corymbia intermedia	0.86	20
Eucalyptus tereticornis	0.88	2
Eucalyptus tindaliae	0	
Lophosten on av@o1ens	D	
Corymbia dtriodora	0.65	4
GHFF FORAGING TREE COUNT/HA		**148**
%BENCHMARK		**n.5.6oo7961**
GHFFSIGNIACANT FORAGING TREE COUNT/HA		**78**
%BENCHMARK		**66.82109765**

denotes GHFF dif!t/foraging tre@sp@CJies per Eby & Law<2008)

denotes si.grnificant GHFF diet/foraging u e spec.ies rer Eby & Law (2008)

	12.11..Sa/12.1124 rel.a:tlve rn..,e,-	%,jleo.	nurnbers;ltes;	weighted rtN 13	t]ltaf '85	co11e-r 'Kmver lOOJ,S	aire tota., stem al/e		
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HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.24 ASSESSMENT UNIT 1 (IAU1-AU2)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	19.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU1-AU2 12.11.24	11.66	12.11.24	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		0m Mark	Zone	Easting	Northing
WGS 84	☐		56	53454	6913599
GDA 94	☑	50m Mark	Zone	Easting	Northing
				533436	6913645
Plot bearing			334	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Eucalyptus siderophloia, Lophostemon confertus and Corymbia intermedia dominnant. Flora field sheet B10.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	6		
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Corymbia citriodora*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Desmodium rhytidophyllum*	Scientific Name	*Eustrephus latifolius*
Scientific Name	*Lomandra longifolia*	Scientific Name	
Scientific Name	*Goodenia rotundifolia*	Scientific Name	
Scientific Name	*Dianella caerulea*	Scientific Name	
Scientific Name	*Pteridium esculentum*	Scientific Name	
Scientific Name	*Glycine clandestina*	Scientific Name	
Scientific Name	*Marsdenia rostrata*	Scientific Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	5.00%		
Scientific Name	*Asparagus aethiopicus*	Common Name	
Scientific Name	*Ochna serrulata*	Common Name	
Scientific Name	*Syagrus romanzoffiana*	Common Name	
Scientific Name	*Schinus terebinthifolius*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	470.00		
1	5.00	26	
2	1.00	27	
3	3.00	28	
4	10.00	29	
5	0.50	30	
6	2.50	31	
7	4.00	32	
8	8.00	33	
9	1.50	34	
10	5.00	35	
11	5.00	36	
12	1.50	37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	2.00%	5.00%	1.00%	15.00%	10.00%	6.60%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	98.00%	95.00%	99.00%	85.00%	90.00%	93.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	28	Number of large non eucalypt trees:	2
Total Number Large Trees:	30		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	66.30%	Sub-canopy:	16.30%	Emergent:	
Shrub canopy cover %	6.60%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU-1 AU2	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Corymbia intermedia	0.86	1	1
Eucalyptus tereticornis	0.88	1	1
Lophostemon confertus	0.46	1	0
Eucalyptus siderophloia	0.81	1	1
Corymbia citriodora	0.65	1	1
Angophora leiocarpa	0.35	1	0
Allocasuarina littoralis	0	0	0
TOTAL	**4.01**	**6**	**4**
AVERAGE	**0.572857143**		
SCORE	**8**	**15**	**10**

IAU-1 AU2	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Corymbia intermedia	0.86	6
Eucalyptus tereticornis	0.88	7
Lophostemon confertus	0.46	6
Eucalyptus siderophloia	0.81	19
Corymbia citriodora	0.65	2
Angophora leiocarpa	0.35	5
Allocasuarina littoralis	0	0
GHFF FORAGING TREE COUNT/HA		**90**
% BENCHMARK		**70.2977814**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**68**
% BENCHMARK		**58.25429026**
	denotes GHFF diet/foraging tree species per Eby & Law (2008)	
	denotes significant GHFF diet/foraging tree species per Eby & Law (2008	

	12.11.5a/12.11.24							
	relative cover	%sites	number sites	weighted cov	total cover	% cover	ave totat stem	ave
			23	**43.5**	**1000.5**			
Eucalyptus tindaliae	0.42	0.35	8.05	18.27	147.0735	0.147	244	35.868
Eucalyptus crebra	0.33	0.26	5.98	14.355	85.8429	0.0858	244	20.9352
Eucalyptus carnea	0.25	0.61	14.03	10.875	152.57625	0.1525	244	37.21
Eucalyptus siderophloia	0.24	0.7	16.1	10.44	168.084	0.168	244	40.992
Corymbia intermedia	0.22	0.78	17.94	9.57	171.6858	0.1716	244	41.8704
Eucalyptus propinqua	0.06	0.35	8.05	2.61	21.0105	0.021	244	5.124
Corymbia citriodora	0.06	0.26	5.98	2.61	15.6078	0.0156	244	3.8064
Eucalyptus microcorys	0.08	0.26	5.98	3.48	20.8104	0.0208	244	5.0752
Angophora leiocarpa	0.06	0.22	5.06	2.61	13.2066	0.0132	244	3.2208
Lophostemon confertus	0.03	0.22	5.06	1.305	6.6033	0.0066	244	1.6104
Eucalyptus tereticornis	0.13	0.26	5.98	5.655	33.8169	0.0338	244	8.2472
Eucalyptus resinifera	0.08	0.13	2.99	3.48	10.4052	0.0104	244	2.5376
Corymbia henryi	0.03	0.09	2.07	1.305	2.70135	0.0027	244	0.6588
Eucalyptus seeana	0.04	0.09	2.07	1.74	3.6018	0.0036	244	0.8784
Angophora woodsiana	0.04	0.04	0.92	1.74	1.6008	0.0016	244	0.3904
Corymbia tessellaris	0.02	0.04	0.92	0.87	0.8004	0.0008	244	0.1952
Eucalyptus acmenoides	0.01	0.04	0.92	0.435	0.4002	0.0004	244	0.0976
Eucalyptus helidonica	0.01	0.04	0.92	0.435	0.4002	0.0004	244	0.0976
BENCH GHFF FORAGE	128.0268							
BENCH GHFF SIGNIFICANT	116.7296							

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.25 ASSESSMENT UNIT 2 (IAU2-AU3)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	4/07/2021

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU2-AU3 12.11.25	10.045	12.11.25	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534834	6906637
GDA 94 ☑	50m Mark	56	534796	6906650
Plot bearing		280	Recorders	TR

Site description and Location (including details of discrete polygons within the assessment unit)
Corymbia intermedia, C. henryii, Eucalyptus seeana and E. tindaliae co-dominant. Flora field sheet CC11.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	13		
Scientific Name	*Corymbina intermedia*	Scientific Name	*Lophostemon suaveolens*
Scientific Name	*Eucalyptus propinqua*	Scientific Name	*Lophostemon confertus*
Scientific Name	*Eucalyptus crebra*	Scientific Name	*Allocasuarina littoralis*
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Eucalyptus microcorys*	Common Name	
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Eucalyptus pilularis*	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Acacia leiocalyx*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name		Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	10		
Scientific Name	*Geodorum densiflorum*	Scientific Name	*Chrysocephalum apiculatum*
Scientific Name	*Pteridium esculentum*	Scientific Name	*Goodenia rotundifolia*
Scientific Name	*Lomandra filiformis*	Scientific Name	*Glycine clandestina*
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Asparagus aethiopicus*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name	*Gomphocarpus physocarpus*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name	*Schefflera actinophylla*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	470.00		
1	4.00	26	
2	2.00	27	
3	1.00	28	
4	3.00	29	
5	10.00	30	
6	2.00	31	
7	5.00	32	
8	0.50	33	
9	1.50	34	
10	2.00	35	
11	4.00	36	
12	2.00	37	
13	1.00	38	
14	6.00	39	
15	3.00	40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	75	Quadrat 5	Average
	40.00%	10.00%	2.00%	0.00%	30.00%	16.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	60.00%	90.00%	98.00%	100.00%	70.00%	83.60%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	31	Number of large non eucalypt trees:	7
Total Number Large Trees:	38		

Median Tree Canopy Height Measurements	Canopy:	20.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	75

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	36.40%	Sub-canopy:	52.30%	Emergent:	
Shrub canopy cover %	15.80%					

Note: Only assess Emergent (E) or Subcanopy (S) layers if the benchmark document stipulates that layers are present *If trees are in the same layer and continuous along the transect you can group them

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU-2 AU3	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Corymbia intermedia	0.86	1	1
Eucalyptus propinqua	0.34	1	0
Eucalyptus crebra	0.65	1	1
Eucalyptus carnea	0	0	0
Corymbia henryi	0.54	1	0
Eucalyptus microcorys	0	0	0
Eucalyptus tereticornis	0.88	1	1
Eucalyptus seeana	0.78	1	1
Eucalyptus pilularis	0.67	1	1
Lophostemon suaveolens	0	0	0
Lophostemon confertus	0.46	1	0
Eucalyptus siderophloia	0.81	1	1
Allocasuarina littoralis	0	0	0
TOTAL	**5.99**	**9**	**6**
AVERAGE	**0.460769231**		
SCORE	**5**	**20**	**15**

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

IAU-2 AU3	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Corymbia intermedia	0.86	50
Eucalyptus propinqua	0.34	0
Eucalyptus crebra	0.65	16
Eucalyptus carnea	0	4
Corymbia henryi	0.54	6
Eucalyptus microcorys	0	1
Eucalyptus tereticornis	0.88	7
Eucalyptus seeana	0.78	4
Eucalyptus pilularis	0.67	1
Lophostemon suaveolens	0	4
Lophostemon confertus	0.46	0
Eucalyptus siderophloia	0.81	8
Allocasuarina littoralis	0	0
GHFF FORAGING TREE COUNT/HA		**184**
% BENCHMARK		**126.2168955**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**172**
% BENCHMARK		**313.9832055**

	12.11.5K/12.11.25		ave stem density	264
	relative cover	frequency	ave stem density	
Eucalyptus crebra	0.32	0.33	27.8784	
Corymbia henryi	0.29	0.92	70.4352	
Eucalyptus carnea	0.2	0.83	43.824	
Eucalyptus siderophloia	0.13	0.5	17.16	
Eucalyptus tindaliae	0.13	0.33	11.3256	
Corymbia intermedia	0.05	0.5	6.6	
Corymbia citriodora	0.03	0.17	1.3464	
Eucalyptus fibrosa	0.29	0.17	13.0152	
Eucalyptus microcorys	0.05	0.17	2.244	
Eucalyptus seeana	0.04	0.17	1.7952	
Lophostemon confertus	0.06	0.17	2.6928	
Angophora leiocarpa	0.02	0.08	0.4224	
Angophora woodsiana	0.1	0.08	2.112	
Eucalyptus dura	0.36	0.08	7.6032	
Eucalyptus helidonica	0.15	0.08	3.168	
Eucalyptus major	0.01	0.08	0.2112	
Eucalyptus propinqua	0.1	0.08	2.112	
Eucalyptus tereticornis	0.02	0.08	0.4224	
BENCH GHFF FORAGE	145.7808			
BENCH GHFF SIGNIFICANT	54.78			

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.25 ASSESSMENT UNIT 2 (IAU2-AU4)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	8.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU2-AU4 12.11.25	10.045	12.11.25	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534205	6907702
GDA 94 ☑		Zone	Easting	Northing
	50m Mark		534229	6907663
Plot bearing		145	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by Corymbia henryii. Flora field sheet CC18.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	7		
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Eucalyptus crebra*	Common Name	
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Leptospermum polygalifolium*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Cymbopgon refractus*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	9		
Scientific Name	*Lepidosperma laterale*	Common Name	*Parsonsia straminea*
Scientific Name	*Geodorum densiflorum*	Common Name	*Glycine clandestina*
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Lomandra filiformis*	Common Name	
Scientific Name	*Desmodium rhytidophyllum*	Common Name	
Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	1.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Passiflora subpeltata*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	1260.00		
1	2.50	26	10.00
2	0.50	27	5.00
3	6.50	28	2.00
4	5.50	29	8.00
5	4.00	30	2.00
6	2.00	31	3.00
7	2.00	32	5.00
8	1.00	33	2.00
9	1.00	34	
10	2.00	35	
11	5.00	36	
12	11.00	37	
13	4.50	38	
14	1.00	39	
15	8.00	40	
16	5.00	41	
17	1.50	42	
18	4.00	43	
19	1.00	44	
20	2.00	45	
21	3.00	46	
22	8.00	47	
23	2.00	48	
24	3.00	49	
25	3.00	50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	1.00%	1.00%	2.00%	2.00%	5.00%	2.20%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	98.00%	95.00%	96.00%	95.00%	93.00%	95.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	46	Non- Eucalypt Large tree DBH benchmark used:	20
Number of large eucalypt trees:	58	Number of large non eucalypt trees:	4
Total Number Large Trees:	62		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	8.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	45.90%	Sub-canopy:	32.00%	Emergent:	
Shrub canopy cover %	16.70%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU-2 AU4	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Corymbia henryi	0.54	1	0
Corymbia intermedia	0.86	1	1
Eucalyptus carnea	0	0	0
Eucalyptus seeana	0.78	**1**	**1**
Lophostemon confertus	0.46	1	0
Eucalyptus crebra	0.65	1	1
Eucalyptus pilularis	0.67	1	1
TOTAL	**3.96**	**6**	**4**
AVERAGE	**0.565714286**		
SCORE	**8**	**15**	**10**

IAU-2 AU4	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Corymbia henryi	0.54	53
Corymbia intermedia	0.86	5
Eucalyptus carnea	0	21
Eucalyptus seeana	0.78	**2**
Lophostemon confertus	0.46	0
Eucalyptus crebra	0.65	7
Eucalyptus pilularis	0.67	2
GHFF FORAGING TREE COUNT/HA		**138**
% BENCHMARK		**94.66267163**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**32**
% BENCHMARK		**58.4154801**
	denotes GHFF diet/foraging tree species per Eby & Law (2008)	
	denotes significant GHFF diet/foraging tree species per Eby & Law (2008	

	12.11.5K/12.11.25		ave stem density	264
	relative cover	frequency	ave stem density	
Eucalyptus crebra	0.32	0.33	27.8784	
Corymbia henryi	0.29	0.92	70.4352	
Eucalyptus carnea	0.2	0.83	43.824	
Eucalyptus siderophloia	0.13	0.5	17.16	
Eucalyptus tindaliae	0.13	0.33	11.3256	
Corymbia intermedia	0.05	0.5	6.6	
Corymbia citriodora	0.03	0.17	1.3464	
Eucalyptus fibrosa	0.29	0.17	13.0152	
Eucalyptus microcorys	0.05	0.17	2.244	
Eucalyptus seeana	0.04	0.17	1.7952	
Lophostemon confertus	0.06	0.17	2.6928	
Angophora leiocarpa	0.02	0.08	0.4224	
Angophora woodsiana	0.1	0.08	2.112	
Eucalyptus dura	0.36	0.08	7.6032	
Eucalyptus helidonica	0.15	0.08	3.168	
Eucalyptus major	0.01	0.08	0.2112	
Eucalyptus propinqua	0.1	0.08	2.112	
Eucalyptus tereticornis	0.02	0.08	0.4224	
BENCH GHFF FORAGE	145.7808			
BENCH GHFF SIGNIFICANT	54.78			

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.23 ASSESSMENT UNIT 3 (IAU3-AU5)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	8.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU3-AU5 12.11.23	7.655	12.11.23	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534087	6907769
GDA 94 ☑	50m Mark	Zone	Easting	Northing
			534097	6907720
Plot bearing		170	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Co-dominated by Eucalyptus pilularis and Corymbia henryii. Flora field sheet CC20/22.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	9		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Corymbia henryi*	Common Name	
Scientific Name	*Eucalyptus carnea*	Common Name	
Scientific Name	*Eucalyptus tindaliae*	Common Name	
Scientific Name	*Eucalyptus seeana*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Eucalyptus crebra*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	3		
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Ottochla gracillima*	Common Name	
Scientific Name	*Cynodon dactlyon*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Lomandra filiformis*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Goodenia rotundiflora*	Common Name	
Scientific Name	*Geodorum densiflorum*	Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name	*Ageratina adenophora*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	855.00		
1	6.00	26	
2	9.00	27	
3	4.50	28	
4	4.00	29	
5	1.00	30	
6	4.00	31	
7	3.00	32	
8	4.00	33	
9	1.00	34	
10	10.00	35	
11	4.00	36	
12	3.00	37	
13	1.00	38	
14	6.00	39	
15	4.00	40	
16	15.00	41	
17	3.00	42	
18	2.00	43	
19	1.00	44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	0.00%	20.00%	5.00%	2.00%	6.40%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	95.00%	50.00%	75.00%	90.00%	96.00%	81.20%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	47	Non- Eucalypt Large tree DBH benchmark used:	27
Number of large eucalypt trees:	35	Number of large non eucalypt trees:	3
Total Number Large Trees:	38		

Median Tree Canopy Height Measurements	Canopy:	21.00	Sub-canopy:	7.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	55.80%	Sub-canopy:	6.00%	Emergent:	
Shrub canopy cover %	15.00%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU3- AU5	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Eucalyptus pilularis	0.67	1	1
Corymbia intermedia	0.86	1	1
Corymbia henryi	0.54	1	
Eucalyptus carnea	0	0	0
Eucalyptus tindaliae	0	0	0
Eucalyptus seeana	0.78	1	1
Angophora leiocarpa	0.35	1	0
Eucalyptus crebra	0.65	1	1
Lophostemon confertus	0.46	1	0
TOTAL	**4.31**	**7**	**4**
AVERAGE	**0.478888889**		
SCORE	**5**	**20**	**10**

IAU3- AU5	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Eucalyptus pilularis	0.67	11
Corymbia intermedia	0.86	24
Corymbia henryi	0.54	11
Eucalyptus carnea	0	3
Eucalyptus tindaliae	0	8
Eucalyptus seeana	0.78	7
Angophora leiocarpa	0.35	9
Eucalyptus crebra	0.65	5
Lophostemon confertus	0.46	2
Allocasuarina littoralis	0	0
GHFF FORAGING TREE COUNT/HA		**138**
% BENCHMARK		**78.07726254**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**94**
% BENCHMARK		**56.39224043**

	12.11.23		ave stem density	264
	relative cover	frequency	ave stem density	
Eucalyptus pilularis	0.47	1	124.08	
Eucalyptus microcorys	0.24	0.33	20.9088	
Eucalyptus tindaliae	0.22	0.67	38.9136	
Corymbia intermedia	0.17	0.83	37.2504	
Angophora woodsiana	0.05	0.33	4.356	
Corymbia gummifera	0.01	0.33	0.8712	
Eucalyptus resinifera	0.06	0.33	5.2272	
Lophostemon confertus	0.05	0.33	4.356	
Eucalyptus propinqua	0.03	0.17	1.3464	
Eucalyptus siderophloia	0.02	0.17	0.8976	
Syncarpia glomulifera	0.08	0.17	3.5904	
BENCH GHFF FORAGE	176.748			
BENCH GHFF SIGNIFICANT	166.6896			

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.11.23 ASSESSMENT UNIT 3 (IAU3-AU6)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	19.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU3-AU6 12.11.23	7.655	12.11.23	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	534124	6907041
GDA 94 ☑	50m Mark	Zone	Easting	Northing
			534151	6907003
Plot bearing		116	Recorders	TR & BS

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by Eucalyptus pilularis. Small drainage line around the 80m mark. Flora field sheet CC13.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	7		
Scientific Name	*Eucalyptus pilularis*	Common Name	
Scientific Name	*Corymbia intermedia*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Lophostemon suaveolens*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Allocasuarina littoralis*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	4		
Scientific Name	*Melaleuca bracteata*	Common Name	
Scientific Name	*Melaleuca salicina*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Hovea acutifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	4		
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Cymbopogon refractus*	Common Name	
Scientific Name	*Imperata cylindrica*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	*Lepidosperma laterale*	Common Name	
Scientific Name	*Dianella caerulea*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Goodenia rotundifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	2.00%		
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Lantana camara*	Common Name	
Scientific Name	*Paspalum spp.*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	1270.00		
1	14.00	26	
2	15.00	27	
3	24.00	28	
4	1.00	29	
5	2.00	30	
6	6.00	31	
7	4.00	32	
8	10.00	33	
9	20.00	34	
10	3.00	35	
11	2.00	36	
12	1.00	37	
13	3.00	38	
14	8.00	39	
15	2.00	40	
16	0.50	41	
17	1.50	42	
18	3.00	43	
19	2.00	44	
20	3.00	45	
21	2.00	46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	2.00%	40.00%	5.00%	0.00%	10.00%	11.40%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	80.00%	60.00%	50.00%	95.00%	90.00%	75.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	47	Non- Eucalypt Large tree DBH benchmark used:	27
Number of large eucalypt trees:	19	Number of large non eucalypt trees:	5
Total Number Large Trees:	24		

Median Tree Canopy Height Measurements	Canopy:	24.00	Sub-canopy:	12.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	39.50%	Sub-canopy:	10.00%	Emergent:	
Shrub canopy cover %	9.50%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU3- AU5	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Eucalyptus pilularis	0.67	1	1
Corymbia intermedia	0.86	1	1
Corymbia henryi	0.54	1	
Eucalyptus carnea	0	0	0
Eucalyptus tindaliae	0	0	0
Eucalyptus seeana	0.78	1	1
Angophora leiocarpa	0.35	1	0
Eucalyptus crebra	0.65	1	1
Lophostemon confertus	0.46	1	0
TOTAL	**4.31**	**7**	**4**
AVERAGE	**0.478888889**		
SCORE	**5**	**20**	**10**

IAU3- AU5	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Eucalyptus pilularis	0.67	11
Corymbia intermedia	0.86	24
Corymbia henryi	0.54	11
Eucalyptus carnea	0	3
Eucalyptus tindaliae	0	8
Eucalyptus seeana	0.78	7
Angophora leiocarpa	0.35	9
Eucalyptus crebra	0.65	5
Lophostemon confertus	0.46	2
Allocasuarina littoralis	0	0
GHFF FORAGING TREE COUNT/HA		**138**
% BENCHMARK		**78.07726254**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**94**
% BENCHMARK		**56.39224043**

	12.11.23		ave stem density	264
	relative cover	frequency	ave stem density	
Eucalyptus pilularis	0.47	1	124.08	
Eucalyptus microcorys	0.24	0.33	20.9088	
Eucalyptus tindaliae	0.22	0.67	38.9136	
Corymbia intermedia	0.17	0.83	37.2504	
Angophora woodsiana	0.05	0.33	4.356	
Corymbia gummifera	0.01	0.33	0.8712	
Eucalyptus resinifera	0.06	0.33	5.2272	
Lophostemon confertus	0.05	0.33	4.356	
Eucalyptus propinqua	0.03	0.17	1.3464	
Eucalyptus siderophloia	0.02	0.17	0.8976	
Syncarpia glomulifera	0.08	0.17	3.5904	
BENCH GHFF FORAGE	176.748			
BENCH GHFF SIGNIFICANT	166.6896			

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU7)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	21.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU7 REGROWTH 12.3.11	3.347	12.3.11 REGROWTH	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum						
WGS 84 ☐	0m Mark	Zone	Easting	Northing		
GDA 94 ☑		56	532493	6917493		
	50m Mark	Zone	Easting	Northing		
		56	532479	6917528		
Plot bearing			Recorders	TR		

Site description and Location (including details of discrete polygons within the assessment unit)
Blue Gum with weed lower strata. Small drain. Flora field sheet CC-21-J.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	2		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	0		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	0		
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	*cyperus spp*	Common Name	
Scientific Name	*Parsonsia straminae*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	95.00%		
Scientific Name	*Singapore daisy*	Common Name	
Scientific Name	*Blue Billygoat Weed*	Common Name	
Scientific Name	*Columbian Waxweed*	Common Name	
Scientific Name	*Cobblers Pegs*	Common Name	
Scientific Name	*Devils Fig*	Common Name	
Scientific Name	*Cocos Palm*	Common Name	
Scientific Name	*Pigeon Grass*	Common Name	
Scientific Name	*Balloon Cotton*	Common Name	
Scientific Name	*Latana*	Common Name	
Scientific Name	*Silverleaf Desmodium*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	20.00		
1	0.50	26	
2	1.50	27	
3		28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%

Organic Litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	15.00%	0.00%	35.00%	12.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	49	Non- Eucalypt Large tree DBH benchmark used:	36
Number of large eucalypt trees:	2	Number of large non eucalypt trees:	0
Total Number Large Trees:	2		

Median Tree Canopy Height Measurements	Canopy:	18.00	Sub-canopy:	8.00	Emergent:	

Number of ecologically dominant layer species regenerating:	33

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	18.00%	Sub-canopy:	8.00%	Emergent:	
Shrub canopy cover %	0.00%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU4- AU7	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Eucalyptus tereticornis	0.88	1	1
Eucalyptus siderophloia	0.81	1	1
TOTAL	**1.69**	**2**	**2**
AVERAGE	**0.845**		
SCORE	**10**	**5**	**5**

IAU4- AU7	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Eucalyptus tereticornis	0.88	70
Eucalyptus siderophloia	0.81	0
GHFF FORAGING TREE COUNT/HA		**140**
% BENCHMARK		**59.164395 88**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**140**
% BENCHMARK		**63.02195685**

12.3.11	ave stem density	284	
	relative cover	frequency	ave stem density
Eucalyptus tereticornis	0.52	0.71	104.8528
Eucalyptus siderophloia	0.29	0.64	52.7104
Melaleuca quinquenervia	0.25	0.29	20.59
Corymbia intermedia	0.23	0.64	41.8048
Lophostemon suaveolens	0.21	0.43	25.6452
Angophora leiocarpa	0.06	0.36	6.1344
Corymbia tessellaris	0.08	0.21	4.7712
Corymbia citriodora	0.03	0.14	1.1928
Angophora woodsiana	0.18	0.07	3.5784
Eucalyptus seeana	0.05	0.07	0.994
Eucalyptus tindaliae	0.01	0.07	0.1988
BENCH GHFF FORAGE	236.6288		
BENCH GHFF SIGNIFICANT FORAGE	222.1448		

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU8)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	21.4.21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU8 REGROWTH 12.3.20	3.347	12.3.20 REGROWTH	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		0m Mark	Zone	Easting	Northing
WGS 84	☐		56	532982	6914745
GDA 94	☑	50m Mark	Zone	Easting	Northing
			56	533030	6914753
Plot bearing		63	Recorders	TR	

Site description and Location (including details of discrete polygons within the assessment unit)
Wattle dominated with Swamp Oak and Euclaypt Regrowth. Flora field sheet B26.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	10		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name	*Corymbia tessellaris*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Alphitonia excelsa*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Corymbia intermeida*	Common Name	
Scientific Name	*Angophora leiocarpa*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Acacia podalyriifolia*	Common Name	
Scientific Name	*Acacia leiocalyx*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	2		
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name	*Entolasia stricta*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	4		
Scientific Name	*Parsonsia straminae*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Eustrephus latifolius*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	10.00%		
Scientific Name	*Zig zag wattle*	Common Name	rhodes grass
Scientific Name	*wattle*	Common Name	singapore daisy
Scientific Name	*lantana*	Common Name	Elastic grass
Scientific Name	*passionflower*	Common Name	
Scientific Name	*asparagus fern*	Common Name	
Scientific Name	*cocos palm*	Common Name	
Scientific Name	*slash pine*	Common Name	
Scientific Name	*yucca*	Common Name	
Scientific Name	*pigeon grass*	Common Name	
Scientific Name	*paspalum/vasey grass*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	200.00		
1	4.00	26	
2	2.50	27	
3	1.50	28	
4	2.00	29	
5	1.00	30	
6	5.00	31	
7	1.00	32	
8	3.00	33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	65.00%	85.00%	90.00%	75.00%	70.00%	77.00%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	30	Non- Eucalypt Large tree DBH benchmark used:	30
Number of large eucalypt trees:	23	Number of large non eucalypt trees:	8
Total Number Large Trees:	31		

Median Tree Canopy Height Measurements	Canopy:	16.00	Sub-canopy:	10.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	13.00%	Sub-canopy:	83.00%	Emergent:	
Shrub canopy cover %	7.80%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU4- AU8	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Eucalyptus tereticornis	0.88	1	1
Casuarina glauca	0	0	0
Corymbia tessellaris	0.4	1	0
Alphitonia excelsa	0	0	0
Lophostemon confertus	0.46	1	0
Corymbia intermedia	0.86	1	1
Angophora leiocarpa	0.35	1	0
Melaleuca quinquenervia	0.88	1	1
Eucalyptus siderophloia	0.81	1	1
TOTAL	**4.64**	**7**	**4**
AVERAGE	**0.515555556**		
SCORE	**8**	**20**	**10**

IAU4- AU8	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Eucalyptus tereticornis	0.88	23
Casuarina glauca	0	8
Corymbia tessellaris	0.4	8
Alphitonia excelsa	0	0
Lophostemon confertus	0.46	2
Corymbia intermedia	0.86	4
Angophora leiocarpa	0.35	0
Melaleuca quinquenervia	0.88	0
Eucalyptus siderophloia	0.81	7
Acacia	0	0
GHFF FORAGING TREE COUNT/HA		**88**
% BENCHMARK		**37.18904884**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**68**
% BENCHMARK		**30.61066476**

12.3.11	ave stem density	284	
	relative cover	frequency	ave stem density
Eucalyptus tereticornis	0.52	0.71	104.8528
Eucalyptus siderophloia	0.29	0.64	52.7104
Melaleuca quinquenervia	0.25	0.29	20.59
Corymbia intermedia	0.23	0.64	41.8048
Lophostemon suaveolens	0.21	0.43	25.6452
Angophora leiocarpa	0.06	0.36	6.1344
Corymbia tessellaris	0.08	0.21	4.7712
Corymbia citriodora	0.03	0.14	1.1928
Angophora woodsiana	0.18	0.07	3.5784
Eucalyptus seeana	0.05	0.07	0.994
Eucalyptus tindaliae	0.01	0.07	0.1988
BENCH GHFF FORAGE	236.6288		
BENCH GHFF SIGNIFICANT FORAGE	222.1448		

HABITAT ASSESSMENT FIELD OBTAINED DATA: REMNANT RE: 12.3.11/20 ASSESSMENT UNIT 4 (IAU4-AU9)

Part C - Site Data

Property	Impact Area Coomera Connector Stage 1	Date	29-4-21

Assessment Unit:	Assessment Unit Area (ha)	RE	Bioregion Number
IAU4-AU9 REMNANT 12.3.11	3.347	12.3.11	Southeast Queensland

Landscape Photo- Please attach or insert north, south, east and west photos in the spaces provided from row 231-355 below and include details such as Time and Mapping Coordinates in the following row.

Datum		Zone	Easting	Northing
WGS 84 ☐	0m Mark	56	533689	6909494
GDA 94 ☑	50m Mark	56	533711	6909579
Plot bearing			Recorders	TR & KK

Site description and Location (including details of discrete polygons within the assessment unit)
Proximate to Coombabah Creek. Subject to minor ponding. Blue Gum and Swamp Oak co-dominant species with Wattle regrowth also common.

Part D - Native Species Richness: (*list species below)

Tree species richness:			
Total number of species	10		
Scientific Name	*Eucalyptus tereticornis*	Common Name	
Scientific Name	*Eucalyptus microcorys*	Common Name	
Scientific Name	*Casuarina glauca*	Common Name	
Scientific Name	*Eucalyptus siderophloia*	Common Name	
Scientific Name	*Acacia disparrima*	Common Name	
Scientific Name	*Acacia melanoxylon*	Common Name	
Scientific Name	*Callistemon salignus*	Common Name	
Scientific Name	*Melaleuca quinquenervia*	Common Name	
Scientific Name	*Lophostemon confertus*	Common Name	
Scientific Name	*Myrsine variabilis*	Common Name	

Shrub species richness:			
Total number of species	7		
Scientific Name	*Ficus watkinsiana*	Common Name	
Scientific Name	*Breynia oblongifolia*	Common Name	
Scientific Name	*Macaranga tanarius*	Common Name	
Scientific Name	*Glochidion sumatranum*	Common Name	
Scientific Name	*Cryptocarya triplinervis*	Common Name	
Scientific Name	*Leptospermum polygalifolium*	Common Name	
Scientific Name	*Cupaniopsis anacardioides*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	*Oplismenus aemulus*	Common Name	
Scientific Name	*Ottochloa gracillima*	Common Name	
Scientific Name	*Themeda triandra*	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Forbs and others (non grass ground) species richness:			
Total number of species	8		
Scientific Name	*Goodenia rotundifolia*	Scientific Name	*Persicaria attenuata*
Scientific Name	*Maclura cochinchinensis*	Scientific Name	*Pseuderanthemum variabile*
Scientific Name	*Parsonsia straminea*	Common Name	
Scientific Name	*Lobelia purpurascens*	Common Name	
Scientific Name	*Lomandra longifolia*	Common Name	
Scientific Name	*Hardenbergia violacea*	Common Name	
Scientific Name	*Smilax australis*	Common Name	

Part E - Non-Native Plant Cover: (*list species below)

Total percentage cover within plot	25.00%		
Scientific Name	*Mangifera indica*	Scientific Name	*Solanum nigrum*
Scientific Name	*Lantana camara*	Scientific Name	*Asparagus virgatus*
Scientific Name	*Passiflora suberosa*	Common Name	
Scientific Name	*Ageratina adenophora*	Common Name	
Scientific Name	*Senna pendula var. glabrata*	Common Name	
Scientific Name	*Ageratum houstonianum*	Common Name	
Scientific Name	*Setaria sphacelata*	Common Name	
Scientific Name	*Senecio madagascariensis*	Common Name	
Scientific Name	*Cuphea carthagenensis*	Common Name	
Scientific Name	*Solanum torvum*	Common Name	

Part F - Coarse Woody Debris: (*list lengths of individual logs in meters)

Total Length of Course Woody Debris (Meters):	60.00		
1	1.00	26	
2	4.00	27	
3	1.00	28	
4		29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Part G - Native perennial grass cover, organic litter: (*provide percentage cover within each quadrat, and provide average cover)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	40.00%	5.00%	96.00%	0.00%	15.00%	31.20%

Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	15.00%	75.00%	2.00%	10.00%	80.00%	36.40%

Part H- Number of large trees , tree canopy height, recruitment of woody perennial species:

Eucalypt Large tree DBH benchmark used :	49	Non- Eucalypt Large tree DBH benchmark used:	36
Number of large eucalypt trees:	14	Number of large non eucalypt trees:	2
Total Number Large Trees:	16		

Median Tree Canopy Height Measurements	Canopy:	22.00	Sub-canopy:	12.00	Emergent:	

Number of ecologically dominant layer species regenerating:	100

Part I - Tree canopy cover, Shrub canopy cover

Tree canopy cover %	Canopy:	51.50%	Sub-canopy:	36.00%	Emergent:	
Shrub canopy cover %	12.50%					

ASSESSMENT UNITS	GHFF potential habitat within 20km radius (HA)	% GHFF potential habitat within 20km radius	Active GHFF camps within 20km	Level 3 or higher GHFF active camps within 20km
IAU-1 AU1	30570	24.51483561	15	2
IAU-1 AU2	29870	23.95348837	13	1
IAU-2 AU3	30290	24.29029671	18	5
IAU-2 AU4	31520	25.27666399	19	5
IAU-3 AU5	31770	25.47714515	19	5
IAU-3 AU6	31690	25.41299118	18	5
IAU-4 AU7	29310	23.50441059	11	1
IAU-4 AU8	29820	23.91339214	10	1
IAU-4 AU9	31900	25.58139535	18	4

Case Reference	EPBC2020-8646
Project Name	MERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSM ENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes	Assessment Unit Number								
			IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
		Assessment Unit Area (ha)	11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
		Regional Ecosystems	12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
		Bioregion	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
1	Site Condition Attributes	1. Recruitment of woody perennial species (Number of ecologically dominant layers regenerating)	100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness									
		- Trees	80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Shrubs	75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Grasses	33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Forbs	41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		3. Tree canopy height									
		- Canopy Layer	84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Sub-Canopy Layer	100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Emergent Layer									
		4. Tree canopy cover									
		- Canopy Layer	76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Sub-Canopy Layer	25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Emergent Layer									
		5. Shrub canopy cover	98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		6. Native perennial grass cover	10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		7. Organic litter	212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		8. Large trees	33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		9. Coarse woody debris (Meters)	99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		10. Weed cover	3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
	tes	11. Size of patch (fragmented)	10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU4- AU9	GHFF FORAGING TREE FLOWER SCORE	GHFF FORAGING TREE SPECIES COUNT	GHFF SIGNIFICANT FORAGING TREE SPECIES COUNT
Eucalyptus tereticornis	0.88	1	1
Eucalyptus microcorys	0	0	0
Casuarina glauca	0	0	0
Eucalyptus siderophloia	0.81	1	1
Callistemon salignus	0	0	0
Melaleuca quinquenervia	0.88	1	1
Lophostemon confertus	0.46	1	0
Myrsine variabilis	0	0	0
TOTAL	**3.03**	**4**	**3**
AVERAGE	**0.37875**		
SCORE	**5**	**10**	**10**

IAU4- AU9	GHFF FORAGING TREE FLOWER SCORE	T1 ABUNDANCE
Eucalyptus tereticornis	0.88	23
Eucalyptus microcorys	0	1
Casuarina glauca	0	0
Eucalyptus siderophloia	0.81	33
Callistemon salignus	0	0
Melaleuca quinquenervia	0.88	0
Lophostemon confertus	0.46	0
Myrsine variabilis	0	0
Acacia	0	0
GHFF FORAGING TREE COUNT/HA		**112**
% BENCHMARK		**47.3315167**
GHFF SIGNIFICANT FORAGING TREE COUNT/HA		**112**
% BENCHMARK		**50.41756548**

12.3.11	ave stem density	284	
	relative cover	frequency	ave stem density
Eucalyptus tereticornis	0.52	0.71	104.8528
Eucalyptus siderophloia	0.29	0.64	52.7104
Melaleuca quinquenervia	0.25	0.29	20.59
Corymbia intermedia	0.23	0.64	41.8048
Lophostemon suaveolens	0.21	0.43	25.6452
Angophora leiocarpa	0.06	0.36	6.1344
Corymbia tessellaris	0.08	0.21	4.7712
Corymbia citriodora	0.03	0.14	1.1928
Angophora woodsiana	0.18	0.07	3.5784
Eucalyptus seeana	0.05	0.07	0.994
Eucalyptus tindaliae	0.01	0.07	0.1988
BENCH GHFF FORAGE	236.6288		
BENCH GHFF SIGNIFICANT FORAGE	222.1448		

Appendix G2: GHFF habitat – summarised HQS data

3.2.3 Grey-headed Flying-fox Impact Assessment Table

GREY-HEADED FLYING-FOX | **HABITAT QUALITY SCORE = 7.38** | **ROUNDS TO 7/10**

Assessment Unit - Regional Ecosystem	IAU-1 RE12.11.24 Remnant									IAU-2 RE12.11.25 Remnant									IAU-3 RE12.11.23 Remnant									IAU-4 RE 12.3.11/20 Remnant								
Site Reference	Benchmark	Plot 1			Plot 2			Average % benchmark	Average Score	Benchmark	Plot 3			Plot 4			Average % benchmark	Average Score	Benchmark	Plot 5			Plot 6			Average % benchmark	Average Score	Benchmark	Plot 7			Benchmark	Plot 8			Benchmark	Plot 9			Average % benchmark	Average Score
	12.11.24	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.25	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.23	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.3.11	Raw Data	% Benchmark	Score	12.3.20	Raw Data	% Benchmark	Score	12.3.11	Raw Data	% Benchmark	Score		
Site Condition																																							
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5	100	75	75.0	3	100	100.0	5	87.5	5	100	100	100.0	5	100	100.0	5	100.0	5	100	33	33.0	1	100	100	100.0	5	100	100	100.0	5	77.7	5
Native plant species richness - trees	10	8	80.0	2.5	6	60.0	2.5	70.0	2.5	7	13	185.7	5	7	100.0	5	142.5	5	1	1	112.5	5	1	87.5	2.5	100.0	5	1	1	28.6	2.5	1	10	250.0	5	1	10	142.9	5	140.5	5
Native plant species richness - shrubs	8	6	75.0	2.5	5	62.5	2.5	68.8	2.5	8	5	62.5	2.5	6	75.0	2.5	68.8	2.5	12	3	25.0	2.5	4	33.3	2.5	29.2	2.5	0	0	0.0	0	0	0	125.0	5	3	7	100.0	5	75.0	2.5
Native plant species richness - grasses	9	3	33.3	2.5	3	33.3	2.5	33.3	2.5	9	4	44.4	2.5	3	33.3	2.5	38.9	2.5	4	4	80.0	5	4	80.0	2.5	80.0	2.5	12	0	0.0	0	0	0	100.0	5	12	3	25.0	2.5	41.7	2.5
Native plant species richness - forbs	17	7	41.2	2.5	8	47.1	2.5	44.1	2.5	13	10	76.9	2.5	9	69.2	2.5	73.1	2.5	15	6	40.0	2.5	5	33.3	2.5	36.7	2.5	25	1	12.0	0	1	1	50.0	2.5	25	8	32.0	2.5	31.3	2.5
Tree canopy height	26	22	84.6	5	22.0	84.6	5	84.6	5	22	20	90.9	5	22	100.0	5	95.5	5	25	21	72.4	5	24	82.8	5	77.6	5	23	18	78.3	5	16	16	100.0	5	23	22	95.7	5	91.3	5
Tree subcanopy height	10	10	100.0	5	10.0	100.0	5	100.0	5	9	10	111.1	5	8	88.9	5	100.0	5	10	1	70.0	5	12	120.0	5	95.0	5	1	1	100.0	5	1	10	125.0	5	1	12	150.0	5	125.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	18	16.0	88.9	5	16.0	88.9	5	88.9	5	15.5	15.0	96.8	5	15	96.8	5	96.8	5	19.5	14	71.8	5	18	92.3	5	82.1	5	15.5	13	83.9	5	12	11	108.3	5	15.5	17	109.7	5	100.6	5
Tree canopy cover (EDL)	72	55	76.4	5	66.3	92.1	5	84.2	5	40	36.4	91.0	5	45.9	114.8	5	102.5	5	6	5	88.6	5	3	62.1	5	75.4	5	5	1	32.1	2	7	1	18.6	2	5	51.5	92.0	5	47.6	2
Subcanopy cover	43	11	25.6	2	16.3	37.9	2	31.7	2	5	52.3	1046.0	5	3	32	3	640.0	5	3	1	75.0	5	1	125.0	5	100.0	5	3	1	24.2	2	2	8	415.0	5	3	36	109.1	5	182.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	57.5	33	57.4	5	41.3	71.8	5	64.6	5	22.5	44.4	197.1	5	39.0	173.1	5	185.3	5	35.5	30.5	87.0	5	24.75	69.7	5	78.6	5	44.5	13	29.2	2	45	48	106.7	5	44.5	43.75	98.3	5	78.1	5
Shrub canopy cover	7	6.9	98.6	5	6.6	94.3	5	96.4	5	4	15.8	395.0	3	3	16.7	417.5	3	406.3	12	1	125.0	5	9.5	79.2	5	102.1	5	20	0	0.0	0	15	7.2	52.0	5	20	12.5	62.5	5	38.2	3
Native grass cover	39	4.2	10.8	1	6.6	16.9	1	13.8	1	20	16.4	82.0	3	2.2	11.0	1	46.5	1	2	6.4	30.5	1	11.4	54.3	1	42.4	1	44	0	0.0	0	20	5.0	25.0	1	44	31.2	70.9	3	32.0	1
Organic litter	45	95.8	212.9	3	93.4	207.6	3	210.2	3	65	83.6	128.6	5	95.4	146.8	5	137.7	5	56	81.2	145.0	5	75	133.9	5	139.5	5	33	12	32.4	1	36	7	256.7	5	33	36.4	98.4	5	129.2	5
Number of large trees (ha)	33	11	33.3	5	30.0	90.9	10	62.1	10	23	38	165.2	15	62	269.6	15	217.4	15	14	38	271.4	15	24	171.4	15	221.4	15	30	2	6.7	1	165	31	18.8	5	30	16	53.3	10	26.3	5
Coarse woody debris (m/ha)	546	541	99.1	5	470.0	86.1	5	92.6	5	100	470	470.0	2	1260	1260.0	5	865.0	5	48	85	178.1	5	127	264.6	5	221.4	5	55	20	3.6	0	89	200.0	22.5	2	55	60	10.8	2	12.3	2
Non-native plant cover	0	3		10	5.0		5	4.0	10	0	2		10	1		10	1.5	10	1	10		5	1		10	6.0	5	1	99		1	1	10		1	1	25		5	43.3	3
			Value	Score		Value	Score	Average	Average Score			Value	Score		Value	Score	Average	Average Score			Value	Score		Value	Score	Average	Average Score			Value	Score			Value	Score			Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.5	5		0.57	8	0.54	8			0.46	5		0.57	6	0.52	8.0			0.48	5		0.48	5	0.48	5			0.85	10			0.52	8			0.38	5	0.58	8
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			6	15		6	15	6.0	15			9	20		6	15	7.5	20.0			1	2		4	10	5.5	15			2	5			7	20			4	10	4.3	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			4	10		4	10	4.0	10			6	15		4	10	5.0	15			1	10		1	10	3.5	10			2	5			4	10			3	10	3.0	10.0
Site Condition Score				84			87		92				103.5			96.5		106.50				101			90	40.5				90.5				91.5				85		74.5
MAX Site Condition Score				*130*			*130*		*130*				*130*			*130*		*130*				*130*			*130*	*130*				*130*				*130*				*130*		*130*
Site Condition Score - out of 4				**2.58**			**2.68**		**2.83**				**3.18**			**2.97**		**3.28**				**3.11**			**2.77**	**1.25**				**2.82**				**2.62**				**2.29**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**			**Value**	**Score**			**Value**	**Score**			**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)				10			10		10				2																											2.33
Connectivity																																								
No. active GHFF camps within 20km			15	10		13	10	14.0	10			18	10		19	10	18.5	10			15	10		18	10	18.5	10			13	10			10	10			18	10	13.0	10
Context																																								
% GHFF foraging habitat within 20 km			25.51	2		23.95	2	24.7	2			24.29	2		25.28	4	24.8	4			25.48	4		25.41	4	25.4	4			23.5	4			23.91	2			25.58	4	24.3	2
Ecological Corridors				6			6		6				6			6		6				6			6	6				6				6				6		2
Role of site location to species overall population in the state																																								
No. of active 2 level three GHFF camps within a 20km			2	4		1	2	1.5	3			5	10		5	10	5.0	10			1	10		1	10	5.0	10			1	2			1	2			4.0	8	2	4
Absence of threats *				5.5			5.5		5				5.5			5.5		5.5				5.5			5.5						2.5				3.5				5		5
Site Context Score				37.5			35.5		36.5				35.5			37.5		36.5				37.5			37.5	37.5				16.5				17.5				40		25
MAX Site Context Score				*56*			*56*		*56*				*56*			*56*		*56*				*56*			*56*	*56*				*56*				*56*				*56*		*56*
Site Context Score - out of 3				**2.01**			**1.90**		**1.96**				**1.90**			**2.01**		**1.96**				**2.01**			**2.01**	**2.01**				**0.88**				**0.94**				**2.14**		**1.32**

	IAU-1 RE12.11.24 Remnant									IAU-2 RE12.11.25 Remnant									IAU-3 RE12.11.23 Remnant									IAU-4 RE 12.3.11/20 Remnant								
Species Stocking Rate (SSR) **	Benchmark	Plot 1			Plot 2			Average	Average Score	Benchmark	Plot 3			Plot 4			Average	Average Score	Benchmark	Plot 5			Plot 6			Average	Average Score	Benchmark	Plot 7			Benchmark	Plot 8			Benchmark	Plot 9			Average	Average Score
	12.11.24	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.25	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.11.23	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			12.3.11	Raw Data	% Benchmark	Score	12.3.20	Raw Data	% Benchmark	Score	12.3.11	Raw Data	% Benchmark	Score		
Abundance of large trees	33	11	33.3	4	30.0	90.9	8	62.1	6	23	38	165.2	10	62	269.6	10	217.4	10	14	38	271.4	10	24	171.4	10	221.4	10	30	2	6.7	1	165	31	18.8	2	30	16	53.3	6	26.3	4
Timing of GHFF Biological Resources				10			10		10				10			10		10				10			10	10				6.25				10				10		8.75
Total SRR score (out of 20)				14			18		16				20			20		20				20			18	20				8				12				16		13
Max SRR Score				*20*			*20*		*20*				*20*			*20*		*20*				*20*			*20*	*20*				*20*				*20*				*20*		*20*
SRR Score (out of 3)				**2.10**			**2.70**		**2.40**				**3.00**			**3.00**		**3.00**				**3.00**			**2.70**	**3.00**				**1.24**				**1.80**				**2.40**		**1.91**

Final habitat quality score (weighted)	IAU-1 RE12.11.24 Remnant	IAU-2 RE12.11.25 Remnant	IAU-3 RE12.11.23 Remnant	IAU-4 RE 12.3.11/20 Remnant	Final
Site Condition score (out of 3)	2.83	3.28	2.78	2.29	*2.80*
Site Context Score (out of 3)	1.96	1.96	2.01	1.32	*1.81*
Species Stocking Rate Score (out of 4)	2.40	3.00	3.00	1.91	*2.58*
Habitat Quality score (out of 10)	*7.19*	*8.23*	*7.79*	*5.53*	*7.18*
Impact Assessment Unit area (ha)	23.32	20.09	15.31	10.04	68.76
Total impact area (ha) for this MNES	68.76	68.76	68.76	68.76	
Size Weighting	0.339	0.292	0.223	0.146	
Weighted Habitat Quality Score	***2.44***	***2.41***	***1.74***	***0.81***	*7.38*

From the Offset Assessment Guide, quantum of impact for Grey-headed Flying-fox = 68.76 ha x 0.7 = 48.13 ha

** Absence of threats re-scored using BAAM threat scoring table applied at offset sites

** Stocking rate scoring adjusted to match offset scoring method - excludes abundance of foraging canopy trees and abundance of significant canopy foraging trees originally included in impact site HQA

Appendix H: Tabooba BioCondition Data

		AU1	AU1	AU2	AU2	AU2	AU2	AU3	AU3	AU4	AU4	AU5	AU5	AU6	AU6
Broad title	**Attribute**	**472-473**	**474-475**	**470-471**	**683-684**	**685-686**	**734-735**	**687-688**	**756-757**	**680-681**	**747-748**	**736-737**	**751-752**	**745-746**	**754-755**
LOCATION	Site ID	472-473	474-475	470-471	683-684	685-686	734-735	687-688	756-757	680-681	747-748	736-737	751-752	745-746	754-755
	Date	6/05/2022	6/05/2022	6/05/2022	17/03/2022	17/03/2022	6/05/2022	17/03/2022	7/05/2022	17/03/2022	7/05/2022	6/05/2022	7/05/2022	7/05/2022	7/05/2022
	Observers	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW	DF & LW
	Location	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba	Tabooba
	Datum	MGA94/GDA Zone 58	MGA94/GDA Zone 59	MGA94/GDA Zone 57	MGA94/GDA Zone 56	MGA94/GDA Zone 56	MGA94/GDA Zone 60	MGA94/GDA Zone 56	MGA94/GDA Zone 66	MGA94/GDA Zone 56	MGA94/GDA Zone 63	MGA94/GDA Zone 61	MGA94/GDA Zone 64	MGA94/GDA Zone 62	MGA94/GDA Zone 65
	Plot Origin Zone														
	Plot Origin easting														
	Plot Origin northing														
	Plot Centre Zone														
	Plot Centre easting														
	Plot Centre northing														
	Plot bearing	350	30	270	210	210	350	270	30	150	330	210	270	60	30
	Plot allignment description														
	Locality description														
REGIONAL ECOSYSTEM & TREE HEIGHTS	Habitat description	Remnant *Eucalyptus crebra, E tereticornis* and *Angophora subvelutina* open forest	Remnant *Eucalyptus crebra* and *E tereticornis* open forest	Advanced regrowth *Eucalyptus crebra* and *E. tereticornis* subsp *basaltica* open forest	Advanced regrowth open forest dominated by *Eucalyptus tereticornis* subsp. *basaltica* , *Eucalyptus crebra* and *Corymbia intermedia*	Advanced regrowth open forest with occasional emergent relictual trees. Dominant species include *Eucalyptus crebra, Eucalyptus tereticornis, Corymbia tessellaris* and *Corymbia intermedia*	Advanced regrowth open *Eucalyptus crebra* forest	Young regrowth open forest with occasional emergent relictual trees. Dominant species include *Eucalyptus crebra, Eucalyptus tereticornis* and *Corymbia tessellaris*	Young regrowth open forest of *Eucalyptus crebra* and *E tereticornis*	Remnant open forest dominated by *Eucalyptus melliodora, Eucalyptus tereticornis* subsp. *basaltica, Eucalyptus eugeniodes, Angophora subvelutina* and *Corymbia intermedia*	Remnant *Eucalyptus tereticornis* subsp *basaltica, E. melliodora* and *E. eugenioides* open forest	Advanced regrowth *Eucalyptus eugeniodes , E. tereticornis* subsp *basaltica, Eucalyptus melanophloia* open forest	Advanced regrowth open forest of *Eucalyptus tereticornis* subsp *basaltica* and *E. eugenioides*	Cleared paddock (previously 12.8.16)	Cleared paddock (previously 12.8.16)
	Regional Ecosystem	12.8.16	12.8.16	12.8.16	12.8.16	12.8.16	12.8.16	12.8.16	12.8.16	12.8.14	12.8.14	12.8.14	12.8.14	12.8.16	12.8.16
	Tree canopy (EDL) height	15	18	10	16	8	10	15	8	18	15	12	10	0	0
	Tree sub canopy height	8	10	5	8	3	4	5	3	10	5	6	5	0	0
	Emergent height	0	0	0	0	16	0	0	0	0	0	0	0	20	0
SITE PHOTOS	Photo north from plot centre	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled	Labelled
	Photo south from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Photo east from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Photo west from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50x20m AREA	Coarse woody debris (m) (all logs >10cm diam; 0.5m long)	1.8	17	17.5	17.7	9.4	7.9	27.7	6.1	12.8	0.5	17.6	14.6	0	0
100x50m AREA	List native species from EDL	*Eucalyptus crebra* *Eucalyptus tereticornis* *Angophora subvelutina*	*Eucalyptus crebra* *Eucalyptus tereticornis*	*Eucalyptus crebra* *Eucalyptus tereticornis subsp basaltica*	*Eucalyptus tereticornis subsp. basaltica* *Eucalyptus crebra* *Corymbia intermedia*	*Eucalyptus crebra* *Eucalyptus tereticornis* *Corymbia tessellaris* *Corymbia intermedia*	*Eucalyptus crebra* *Corymbia tessellaris* *Corymbia intermedia*	*Eucalyptus crebra* *Corymbia tessellaris* *Eucalyptus tereticornis*	*Eucalyptus crebra* *Eucalyptus tereticornis* *Corymbia tessellaris*	*Eucalyptus melliodora* *Eucalyptus tereticornis subsp. basaltica* *Eucalyptus eugeniodes* *Angophora subvelutina* *Corymbia intermedia*	*Eucalyptus tereticornis subsp basaltica* *Eucalyptus melliodora* *Eucalyptus eugenioides*	*Eucalyptus eugenioides* *Eucalyptus tereticornis subsp. basaltica* *Corymbia tessellaris* *Eucalyptus melanophloia* *Corymbia intermedia*	*Eucalyptus eugenioides* *Eucalyptus tereticornis subsp basaltica* *Angophora subvelutina* *Corymbia tessellaris* *Eucalyptus crebra*	*na*	*na*
	Total number of native tree spp from EDL only	3	2	2	3	4	3	3	3	5	3	5	5	0	0
	List other native tree species not in EDL (tree = single stemmed and >2m)	*Lophostemon confertus* *Allocasuarina torulosa* *Melia azedarach*	*Corymbia tessellaris* *Brachychiton populneus* *Xanthorrhoea glauca* *Allocasuarina torulosa*	*Xanthorrhoea glauca*	*Allocasuarina torulosa* *Eucalyptus melliodora*	*Xanthorrhoea glauca*	*Allocasuarina torulosa* *Xanthorrhoea glauca* *Eucalyptus tereticornis*	*Angophora subvelutina* *Corymbia intermedia*	*Eucalyptus melanophloia* *Angophora subvelutina*	*Allocasuarina torulosa* *Xanthorrhoea glauca* *Angophora subvelutina* *Brachychiton populneus*	*Brachychiton populneus* *Allocasuarina torulosa* *Dodonaea viscosa* *Lophostemon confertus* *Corymbia intermedia* *Angophora subvelutina*	Angophora subvelutina Allocasuarina torulosa Xanthorrhoea glauca	*Melaleuca bracteata* *Allocasuarina torulosa* *Xanthorrhoea glauca*	*Eucalyptus tereticornis* (emergent)	*na*
	Total number of non-EDL species	3	4	1	2	1	3	2	2	3	6	3	3	1	0
	Total native tree spp richness (all tree species >2m + EDL) (Tree Richness)	6	6	3	5	5	6	5	5	8	9	8	8	0	0
	Total native tree spp from EDL recruiting	3	2	2	3	2	3	2	3	5	2	5	5	0	0
	Proportion of EDL Recruiting %	100	100	100	100	50	100	66.66666667	100	100	66.66666667	100	100	0	0
	Eucalypt large tree DBH	42	42	42	42	42	42	42	42	44	44	44	44	42	42
	Non-eucalypt large tree DBH	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Number of large eucalypt trees	5	7	4	6	6	3	1	2	11	3	5	2	0	0
	Number of large non-eucalypt trees	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total large trees	5	7	4	6	6	3	1	2	11	3	5	2	0	0
50x10m AREA	List native shrub species	*Allocasuarina torulosa* *Angophora subvelutina* *Corymbia intermedia* *Eucalyptus crebra* *Eucalyptus tereticornis subsp. basaltica* *Glochidion ferdinandi* *Lophostemon confertus* *Trema tomentosa* *Xanthorrhoea glauca*	*Acacia decora* *Allocasuarina torulosa* *Angophora subvelutina* *Breynia oblongifolia* *Corymbia intermedia* *Eucalyptus crebra* *Eucalyptus tereticornis subsp. basaltica* *Lophostemon confertus* *Trema tomentosa*	*Corymbia intermedia* *Corymbia tessellaris* *Eucalyptus tereticornis subsp. basaltica* *Grewia latifolia* *Xanthorrhoea glauca*	*Corymbia intermedia* *Eucalyptus tereticornis subsp. basaltica* *Xanthorrhoea glauca*	*Brachychiton populneus* *Corymbia intermedia* *Corymbia tessellaris* *Xanthorrhoea glauca*	*Xanthorrhoea glauca*	*Corymbia tessellaris* *Eucalyptus crebra* *Grewia latifolia* *Xanthorrhoea glauca*	*Corymbia tessellaris* *Eucalyptus crebra* *Eucalyptus tereticornis subsp. basaltica*	*Acacia implexa* *Brachychiton populneus* *Eucalyptus melliodora* *Eucalyptus tereticornis subsp. basaltica* *Grewia latifolia* *Trema tomentosa* *Xanthorrhoea glauca*	*Acacia implexa* *Dodonaea viscosa* *Eucalyptus eugeniodes* *Eucalyptus tereticornis subsp. Basaltica*	*Acacia implexa* *Allocasuarina torulosa* *Angophora subvelutina* *Corymbia tessellaris* *Eucalyptus eugeniodes* *Eucalyptus melanophloia* *Eucalyptus tereticornis subsp. basaltica* *Exocarpos strictus* *Xanthorrhoea glauca*	*Angophora subvelutina* *Bursaria spinosa* *Corymbia tessellaris* *Eucalyptus crebra* *Eucalyptus eugeniodes* *Eucalyptus tereticornis subsp. basaltica* *Xanthorrhoea glauca*	*Corymbia intermedia*	-
	Total number of native shrub species (Shrub Richness)	9	10	5	3	4	1	4	3	7	4	9	7	1	0
	List native grass species	*Aristida gracilipes* *Capillipedium spicigerum* *Heteropogon contortus* *Imperata cylindrica* *Oplismenus aemulus* *Panicum effusum* *Panicum simile* *Poa labillardierei* *Sarga leiocladum* *Themeda triandra*	*Aristida benthamii* *Bothriochloa decipiens* *Capillipedium spicigerum* *Cymbopogon refractus* *Digitaria divaricatissima* *Eragrostis sororia* *Heteropogon contortus* *Imperata cylindrica* *Oplismenus aemulus* *Panicum effusum* *Panicum queenslandicum*	*Bothriochloa macra* *Capillipedium spicigerum* *Dichanthium setosum* *Eriochloa crebra* *Heteropogon contortus* *Panicum effusum* *Panicum simile* *Sehima nervosa* *Themeda triandra*	*Aristida benthamii* *Bothriochloa decipiens* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Poa labillardierei* *Themeda triandra*	*Bothriochloa decipiens* *Heteropogon contortus* *Panicum effusum*	*Bothriochloa macra* *Heteropogon contortus* *Panicum effusum* *Panicum simile* *Themeda triandra*	*Bothriochloa decipiens* *Capillipedium spicigerum* *Eragrostis sororia* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Themeda triandra*	*Aristida gracilipes* *Bothriochloa decipiens* *Bothriochloa macra* *Capillipedium spicigerum* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Themeda triandra*	*Capillipedium spicigerum* *Dichanthium tenue* *Imperata cylindrica* *Oplismenus aemulus* *Oplismenus imbecillis* *Paspalidium distans* *Poa labillardierei* *Sarga leiocladum* *Themeda triandra*	*Bothriochloa decipiens* *Capillipedium spicigerum* *Dichanthium setosum* *Eragrostis brownii* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Sarga leiocladum* *Themeda triandra*	*Aristida gracilipes* *Bothriochloa macra* *Capillipedium spicigerum* *Digitaria divaricatissima* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Themeda triandra*	*Aristida gracilipes* *Capillipedium spicigerum* *Eragrostis brownii* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Sarga leiocladum* *Themeda triandra*	*Aristida gracilipes* *Bothriochloa macra* *Capillipedium spicigerum* *Dichanthium setosum* *Eragrostis sororia* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Themeda triandra*	*Aristida gracilipes* *Bothriochloa decipiens* *Bothriochloa macra* *Capillipedium spicigerum* *Dichanthium setosum* *Eragrostis brownii* *Heteropogon contortus* *Imperata cylindrica* *Panicum effusum* *Panicum simile* *Themeda triandra*
	Total number of native grass species (Grass Richness)	10	16	9	8	3	5	7	8	9	10	9	9	10	9
	List native forbs and other	*Adiantum atroviride* *Apowollastonia spilanthoides* *Cheilanthes sieberi* *Coleus australis* *Cyanthillium cinereum* *Cymbidium suave* *Cyperus gracilis* *Desmodium brachypodum* *Desmodium gunnii* *Desmodium rhytidophyllum* *Desmodium varians* *Dianella longifolia* *Dichondra repens* *Einadia hastata* *Eustrephus latifolius* *Galactia tenuiflora* *Geranium gardneri* *Glycine clandestina* *Ipomoea plebeia* *Lobelia purpurascens* *Lomandra multiflora* *Oplismenus aemulus* *Oxalis exilis* *Pigea stellarioides* *Rubus parviflorus* *Scleria mackaviensis* *Senecio quadridentatus* *Smilax australis* *Trema tomentosa* *Verbena africana* *Vittadinia sulcata*	*Apowollastonia spilanthoides* *Chamaecrista nomame* *Cheilanthes sieberi* *Coleus australis* *Crassocephalum crepidioides* *Crotalaria montana* *Cyanthillium cinereum* *Cyperus gracilis* *Desmodium brachypodum* *Desmodium gunnii* *Desmodium rhytidophyllum* *Desmodium varians* *Dianella longifolia* *Dichondra repens* *Eustrephus latifolius* *Gahnia subaequiglumis* *Galactia tenuiflora* *Geranium gardneri* *Glossocardia bidens* *Glycine clandestina* *Lespedeza juncea* *Lomandra multiflora* *Oplismenus aemulus* *Pigea stellarioides* *Rubus parviflorus* *Scleria mackaviensis* *Senecio quadridentatus* *Sida subspicata* *Smilax australis* *Trema tomentosa* *Verbena africana* *Vittadinia dissecta* *Vittadinia sulcata*	*Apowollastonia spilanthoides* *Cheilanthes sieberi* *Chrysocephalum apiculatum* *Crotalaria montana* *Cyanthillium cinereum* *Cyperus cyperoides* *Cyperus gracilis* *Desmodium rhytidophyllum* *Desmodium varians* *Dianella brevipedunculata* *Dianella longifolia* *Dichondra repens* *Euchiton sphaericum* *Galactia tenuiflora* *Glossocardia bidens* *Glycine latifolia* *Glycine tabacina* *Indigofera linnaei* *Ipomoea plebeia* *Lespedeza juncea* *Lomandra multiflora* *Mentha satureioides* *Oxalis exilis* *Rhynchosia minima* *Scleria mackaviensis* *Sida subspicata* *Tephrosia baueri* *Vittadinia sulcata* *Zornia dyctiocarpa*	*Adiantum hispidulum* *Apowollastonia spilanthoides* *Asperula charophyton* *Chrysocephalum apiculatum* *Crotalaria brevis* *Cyanthillium cinereum* *Cyanthillium cinereum* *Cyclophyllum leptophyllum* *Cyperus cyperoides* *Cyperus gracilis* *Cyperus gracilis* *Daucus glochidiatus* *Desmodium gunnii* *Desmodium rhytidophyllum* *Desmodium varians* *Dichondra repens* *Eustrephus latifolius* *Galactia tenuiflora* *Geranium gardneri* *Glossocardia bidens* *Glycine tabacina* *Hydrocotyle laxiflora* *Lespedeza juncea* *Lobelia purpurascens* *Oxalis chnoodes* *Oxalis exilis* *Oxalis exilis* *Plantago debilis* *Ranunculus plebeius* *Scleria mackaviensis* *Viola betonicifolia* *Wahlenbergia communis*	*Brunoniella australis* *Cheilanthes distans* *Chrysocephalum apiculatum* *Cyanthillium cinereum* *Cyperus gracilis* *Dichondra repens* *Euphorbia hirta* *Glycine latifolia* *Glycine tabacina* *Indigofera linnaei* *Lespedeza juncea* *Panicum simile* *Scleria mackaviensis* *Sida fibulifera*	*Cheilanthes sieberi* *Cyanthillium cinereum* *Cyperus cyperoides* *Desmodium rhytidophyllum* *Desmodium varians* *Gahnia aspera* *Galactia tenuiflora* *Glycine latifolia* *Glycine tomentella* *Indigofera linnaei* *Lespedeza juncea* *Mentha satureioides* *Oxalis exilis* *Phyllanthus similis* *Scleria mackaviensis* *Vittadinia sulcata* *Zornia dyctiocarpa*	*Cassytha pubescens* *Cheilanthes sieberi* *Chrysocephalum apiculatum* *Crotalaria lanceolata* *Crotalaria montana* *Cyperus cyperoides* *Cyperus gracilis* *Desmodium rhytidophyllum* *Desmodium varians* *Galactia tenuiflora* *Glycine latifolia* *Indigofera linnaei* *Ipomoea plebeia* *Lespedeza juncea* *Pterocaulon redolens* *Rhynchosia minima* *Vittadinia scabra*	*Boerhavia dominii* *Cassytha pubescens* *Cheilanthes sieberi* *Chrysocephalum apiculatum* *Cyperus cyperoides* *Desmodium varians* *Dichondra repens* *Euphorbia dallachyana* *Galactia tenuiflora* *Glossocardia bidens* *Glycine latifolia* *Glycine stenophita* *Glycine tomentella* *Hypericum gramineum* *Indigofera linnaei* *Lobelia concolor* *Phyllanthus similis* *Pigea stellarioides* *Pimelea glauca* *Rumex brownii* *Schenkia australis* *Scleria mackaviensis* *Tephrosia baueri* *Verbena africana* *Zornia dyctiocarpa*	*Ajuga australis* *Apowollastonia spilanthoides* *Asperula charophyton* *Chamaecrista nomame* *Crotalaria brevis* *Cyanthillium cinereum* *Desmodium brachypodum* *Desmodium gunnii* *Desmodium rhytidophyllum* *Desmodium varians* *Dichondra repens* *Eremophila debilis* *Gahnia aspera* *Galactia tenuiflora* *Glycine tabacina* *Glycine tomentella* *Hardenbergia violacea* *Lespedeza juncea* *Lomandra longifolia* *Lomandra multiflora* *Ranunculus plebeius* *Schenkia australis* *Scleria mackaviensis* *Swainsona galegifolia* *Tephrosia baueri?* *Verbena africana*	*Apowollastonia spilanthoides* *Calotis cuneifolia* *Centella asiatica* *Cheilanthes sieberi* *Crotalaria montana* *Cyanthillium cinereum* *Cyperus cyperoides* *Cyperus gracilis* *Desmodium gunnii* *Desmodium rhytidophyllum* *Desmodium varians* *Dianella brevipedunculata* *Dianella caerulea* *Dianella longifolia* *Dichondra repens* *Digitaria didactyla* *Eremophila debilis* *Euphorbia dallachyana* *Fimbristylis dichotoma* *Gahnia aspera* *Galactia tenuiflora* *Geranium gardneri* *Geranium homeanum* *Glycine latifolia* *Glycine latifolia* *Hydrocotyle laxiflora* *Hydrocotyle laxiflora* *Hypericum gramineum* *Jasminum lineare* *Lespedeza juncea* *Lobelia concolor* *Mentha satureioides* *Oxalis exilis* *Phyllanthus similis* *Phyllanthus similis* *Picris angustifolia* *Pimelea linifolia* *Rhodanthe anthemoides* *Rhynchosia minima* *Schenkia australis* *Scleria mackaviensis* *Sigesbeckia orientalis* *Swainsona galegifolia* *Tephrosia baueri* *Verbena africana* *Vittadinia sulcata* *Wahlenbergia communis* *Wahlenbergia gracilis*	*Centella asiatica* *Cheilanthes sieberi* *Crotalaria montana* *Cyanthillium cinereum* *Cyperus cyperoides* *Desmodium rhytidophyllum* *Desmodium varians* *Dichondra repens* *Digitaria didactyla* *Eupborbia dallachyana* *Fimbristylis dichotoma* *Gahnia aspera* *Galactia tenuiflora* *Geranium gardneri* *Glycine latifolia* *Glycine latifolia* *Glycine stenophita* *Hydrocotyle laxiflora* *Hypericum gramineum* *Jasminum lineare* *Lagenifera sp.* *Lespedeza juncea* *Lobelia concolor* *Mentha satureioides* *Oxalis exilis* *Phyllanthus similis* *Phyllanthus similis* *Pigea stellarioides* *Pimelea glauca* *Rostellularia obtusa* *Schenkia australis* *Scleria mackaviensis* *Verbena africana* *Vittadinia sulcata* *Wahlenbergia communis* *Zornia dyctiocarpa*	*Centella asiatica* *Cheilanthes sieberi* *Cyperus cyperoides* *Desmodium varians* *Dichondra repens* *Euphorbia dallachyana* *Geranium gardneri* *Glycine latifolia* *Glycine stenophita* *Hydrocotyle laxiflora* *Hypericum gramineum* *Lespedeza juncea* *Lobelia concolor* *Oxalis exilis* *Phyllanthus similis* *Pigea stellarioides* *Rumex brownii* *Schenkia australis* *Verbena africana*
	Total number of native forbs and other species (Forbs Richness)	31	34	29	32	15	18	17	27	26	46	27	48	36	20

		AU1	AU1	AU2	AU2	AU2	AU2	AU3	AU3	AU4	AU4	AU5	AU5	AU6	AU6
Broad title	Attribute	Ageratina riparia	Bidens pilosa Co	Bidens pilosa	Conyza bonariensis	Ambrosia artemisifolia	Bidens pilos	583-684	685-686	Dichanthium annulatum	Lantana c	687-688	Dichanthium annulatum	Euphorbia hirta	680-681	Ambrosia artemisiifolia	Aster subulatus	Bidens pilosa	Cirsium vulgare	Crotalaria linifolia	Dich	Aster subulatus	Dichanthium annu	Alternanthera nodiflora	Ambrosia
	Non native species	*Ageratina riparia* *Bidens pilosa* *Conyza bonariensis* *Crassocephalum crepidioides* *Crotalaria linearis* *Euphorbia hirta* *Lantana camara* *Macroptilium atropurpureum* *Malvastrum americanum* *Melinis repens* *Passiflora suberosa* *Passiflora subpeltata* *Solanum americanum* *Sonchus oleraceus* *Verbena bonariensis*	*Bidens pilosa* *Conyza bonariensis* *Crassocephalum crepidioides* *Crotalaria linearis* *Euphorbia hirta* *Gomphocarpus physocarpus* *Lantana camara* *Macroptilium atropurpureum* *Malvastrum americanum* *Melinis repens* *Passiflora suberosa* *Passiflora subpeltata* *Physalis peruviana* *Solanum americanum* *Verbena bonariensis*	*Ambrosia artemisifolia* *Bidens pilosa* *Crassocephalum crepidioides* *Crotalaria linearis* *Euphorbia hirta* *Lantana camara* *Macroptilium atropurpureum* *Malvastrum americanum* *Melinis repens* *Senecio madagascariensis* *Solanum americanum* *Sonchus oleraceus* *Sporobolus fertilis* *Tridax procumbens* *Verbena littoralis*	*Bidens pilosa* *Cirsium vulgare* *Gomphocarpus physocarpus* *Macroptilium lathyroides* *Sigesbeckia orientalis* *Verbena litoralis* *Digitaria didactyla* *Melinis repens* *Lantana camara*	*Bidens pilosa* *Cirsium vulgare* *Crotalaria lanceolata* *Gomphocarpus physocarpus* *Malvastrum americanum* *Physalis angulata* *Senecio madagascariensis* *Tridax procumbens* *Verbena litoralis* *Melinis repens* *Sporobolus fertilis* *Lantana camara*	*Dichanthium annulatum* *Lantana camara* *Macroptilium atropurpureum* *Melinis repens* *Senecio madagascariensis* *Sonchus oleraceus* *Verbena littoralis*	*Ambrosia artemisiifolia* *Bidens pilosa* *Cirsium vulgare* *Euphorbia hirta* *Senecio madagascariensis* *Sigesbeckia orientalis* *Tridax procumbens* *Lantana camara*	*Dichanthium annulatum* *Euphorbia hirta* *Gomphocarpus physocarpus* *Macroptilium atropurpureum* *Melinis repens* *Neonotonia wightii* *Senecio madagascariensis* *Sida retusa* *Tridax procumbens* *Verbena bonariensis* *Verbena littoralis*	*Ambrosia artemisiifolia* *Bidens pilosa* *Erigeron bonariensis* *Passiflora suberosa* *Sigesbeckia orientalis* *Lantana camara* *Verbena litoralis*	*Ambrosia artemisiifolia* *Aster subulatus* *Euphorbia hirta* *Gomphocarpus physocarpus* *Macratyloma* *Senecio madagascariensis* *Sida retusa* *Tagetes minuta* *Verbena bonariensis* *Verbena littoralis*	*Bidens pilosa* *Celtis sinensis* *Cirsium vulgare* *Crotalaria linearis* *Dichanthium annulatum* *Lantana camara* *Macroptilium atropurpureum* *Melinis repens* *Senecio madagascariensis* *Sonchus oleraceus* *Tridax procumbens* *verbena littoralis*	*Cirsium vulgare* *Crotalaria linifolia* *Dichanthium annulatum* *Emilia sonchifolia* *Euphorbia hirta* *Gomphocarpus physocarpus* *Macroptilium atropurpureum* *Malvastrum americanum* *Melinis repens* *Senecio madagascariensis* *Sida retusa* *Tagetes minuta* *Verbena bonariensis* *Verbena littoralis*		*Aster subulatus* *Dichanthium annulatum* *Euphorbia hirta* *Gomphocarpus physocarpus* *Polygala duarteana* *Senecio madagascariensis* *Sida retusa* *Verbena bonariensis* *Verbena littoralis*	*Alternanthera nodiflora* *Ambrosia artemisiifolia* *Aster subulatus* *Chloris gayana* *Cyclophyllum leptophyllum* *Dichanthium annulatum* *Euphorbia hirta* *Gomphocarpus physocarpus* *Macroptilium atropurpureum* *Neonotonia wightii* *Senecio madagascariensis* *Setaria sphacelata* *Sida retusa* *Verbena bonariensis* *Verbena littoralis*
	Non native % cover	40	15	5	20	35	15	30	10	10	35	20	20	20	80
Five 1x1m plots	Plot 1 Native perenial ('decreaser') grass cover %	20	30	5	35	80	7	70	5	30				0	0
	Plot 1 Native other grass (if relevant) %	5	40	15	0	0	54	0	30	0	57		57	10	25
	Plot 1 Native forbs and other species %	4		6	15	5	3	20	5	0	10	2	10	0	0
	Plot 1 Native shrubs <1m %				0	0	17	0		60		52		0	0
	Plot 1 Non-native grass %			45	0	5	9	0		0		40		80	75
	Plot 1 Non-native forbs and shrubs %	55	20	9	35	0	6	10		10	33	2	33	0	0
	Plot 1 Litter %	6	10	20	15	0	4	0	10	0		1		0	0
	Plot 1 Rock %	10			0	5		0		0		2		0	0
	Plot 1 Bare ground %				0	5		0	50	0		1		10	0
	Plot 1 Cryptograms %				0	0		0		0				0	0
	Plot 1 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 2 Native perenial ('decreaser') grass cover %	35	36		20	85		80		45	10	44	60	5	0
	Plot 2 Native other grass (if relevant) %	6	9	10	0	0	20	0		0		10	10	10	0
	Plot 2 Native forbs and other species %	3	3	8	25	5	3	10		15		3	5	10	0
	Plot 2 Native shrubs <1m %				0	0		0		0	5			0	0
	Plot 2 Non-native grass %			60	0	0	60	5	10	0		20		65	95
	Plot 2 Non-native forbs and shrubs %	50	46	12	50	5	12	5		30	80	11		5	0
	Plot 2 Litter %	6	6	10	0	0		0	5	10	5		20	0	0
	Plot 2 Rock %				0	0		0	5	0		7		0	0
	Plot 2 Bare ground %				5	5	5	0	80	0		5	5	5	5
	Plot 2 Cryptograms %				0	0		0		0				0	0
	Plot 2 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 3 Native perenial ('decreaser') grass cover %	55	55	11	75	90	7	90		70	35	45	15	5	0
	Plot 3 Native other grass (if relevant) %		30	19	0	0	40	0	25	0		15	70	5	0
	Plot 3 Native forbs and other species %	1	5	30	15	5		5	5	15	5	5	5	5	0
	Plot 3 Native shrubs <1m %				0	0	44	0		0				0	0
	Plot 3 Non-native grass %	4		8	0	0	6	0	60	0		7	5	85	85
	Plot 3 Non-native forbs and shrubs %	40		7	5	5	3	0		0	25	6	5	0	10
	Plot 3 Litter %		10	18	5	0		0	4	10	30			0	0
	Plot 3 Rock %			7	0	0		5		0		8		0	0
	Plot 3 Bare ground %				0	0		0	5	5	5	5		0	5
	Plot 3 Cryptograms %				0	0		0	1	0		9		0	0
	Plot 3 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 4 Native perenial ('decreaser') grass cover %		15		85	50		75	5	90	15	56	5	0	0
	Plot 4 Native other grass (if relevant) %	40	70	66	0	0	35	0	50	0			20	5	0
	Plot 4 Native forbs and other species %			9	5	0	2	10	5	5	10	3	5	0	0
	Plot 4 Native shrubs <1m %				0	0	30	0		0		10		0	0
	Plot 4 Non-native grass %			9	0	0	3	0	30	0		5		70	95
	Plot 4 Non-native forbs and shrubs %	55	5	7	5	40	30	10		0	30	15	60	10	0
	Plot 4 Litter %	5	5	6	5	10		5		5	30	4	10	0	0
	Plot 4 Rock %				0	0		0		0		7		0	0
	Plot 4 Bare ground %		5	5	0	0		0	10	0	15			15	5
	Plot 4 Cryptograms %			2	0	0		0		0				0	0
	Plot 4 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 5 Native perenial ('decreaser') grass cover %	60			30	50	9	70	10	40		7	20	30	0
	Plot 5 Native other grass (if relevant) %	20	25	27	0	0		0	50	0	40		60	50	0
	Plot 5 Native forbs and other species %	25	10	4	10	10	8	10		10			15	10	0
	Plot 5 Native shrubs <1m %			40	0	0		0		0		80		5	0
	Plot 5 Non-native grass %			26	0	0	63	0	30	0		7		0	95
	Plot 5 Non-native forbs and shrubs %	45			50	40	12	5		30	60	5	5	0	5
	Plot 5 Litter %	10	5	3	10	0	2	10	5	20		1		0	0
	Plot 5 Rock %				0	0		5		0				0	0
	Plot 5 Bare ground %				0	0	6	0	4	0				5	0
	Plot 5 Cryptograms %				0	0		0	1	0				0	0
	Plot 5 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Mean of all Plots Native perenial ('decreaser') grass cover %	22	27.2	3.2	43	61	2.8	63	2	47	12	29	16	2	0
	Mean of all Plots Native other grass (if relevant) %	10.2	29.8	22	0	0	29.8	0	21	0	11.4	5	31.4	6	5
	Mean of all Plots Native forbs and other species %	1.6	1.6	10.6	12	3	1.6	9	3	7	5	2.6	5	3	0
	Mean of all Plots Native shrubs <1m %	0	0	0	0	0	18.2	0	0	12	1	12.4	0	0	0
	Mean of all Plots Non-native grass %	0.8	0	23.6	0	1	15.6	1	20	0	0	14.4	1	60	70
	Mean of all Plots Non-native forbs and shrubs %	40	14.2	7	19	10	10.2	5	0	8	33.6	6.8	19.6	3	2
	Mean of all Plots Litter %	3.4	6.2	10.8	5	2	0.8	1	3.8	5	13	1	6	0	0
	Mean of all Plots Rock %	2	0	1.4	0	1	0	1	1	0	0	4.8	0	0	0
	Mean of all Plots Bare ground %	0	1	1	1	2	1	0	29	1	4	2.2	1	6	3
	Mean of all Plots Cryptograms %	0	0	0.4	0	0	0	0	0.2	0	0	1.8	0	0	0
100m Transect	Canopy Total (m)	44.1	83	23.5	43.5	3	35	28	28	35	27	44	40.5	0	0
	Sub canopy total (m)	17.5	1	6	7	3	11.5	7	3.5	14	0	5	10.5	0	0
	Emergent canopy total (m)	0	0	0	0	4	0	0	0	0	0	0	0	6	0
	Native Shrub total (m)	1	0	1.5	4.5	0	19	0	0	3	1	2	1	0	0
	Exotic Shrub total (m)	32	2.5	1	18	5	8	0.5	3.5	3	38	3.5	0.5	0	0

Appendix I: Greenridge BioCondition Data

APPENDIX 2: BIOCONDITION SURVEY DATA

Broad title	Attribute	AU1 - RE 12.1.1 Remnant	AU1 - RE 12.1.1 Remnant	AU1 - RE 12.1.1 Remnant	AU2 - RE 12.1.1 Regrowth	AU2 - RE 12.1.1 Regrowth	AU3 - RE 12.1.1 Non-remnant	AU3 - RE 12.1.1 Non-remnant	AU4 - RE 12.3.20 Remnant	AU4 - RE 12.3.20 Remnant	AU4 - RE 12.3.20 Remnant	AU5 - RE 12.3.20 Regrowth	AU5 - RE 12.3.20 Regrowth	AU6 - RE 12.3.20 Non-remnant	AU6 - RE 12.3.20 Non-remnant
LOCATION	Site ID	836-837	840-841	962-963	844a-844b	956-957	958-959	970-971	931-932	964-965	966-967	974-975	923-924	972-973	960-961
	Date	30/06/2022	1/07/2022	27/07/2022	1/07/2022	14/07/2022	14/07/2022	21/09/2022	14/07/2022	27/07/2022	3/08/2022	21/09/2022	14/07/2022	21/09/2022	14/07/2022
	Observers	DF/LW/NW	DF/LW	PL/EG	DF/LW	DF/EG	DF/EG	NB/EG	DF/EG	PL/EG	EG/LB	NB/EG	DF/EG	NB/EG	DF/EG
	Location	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera	Coomera
REGIONAL ECOSYSTEM & TREE HEIGHTS	Habitat description	Remnant 12.1.1	Remnant 12.1.1	Remnant 12.1.1 Casuarina glauca forest	Regrowth 12.1.1	Regrowth 12.1.1	Non-remnant 12.1.1	Non-remnant 12.1.1 Grassy paddock	Remnant 12.3.20	Remnant 12.1.1	Remnant 12.3.20	Regrowth 12.3.20 Dense regrowth of Melaluca and Casuarina	Regrowth 12.3.20	Non-remnant 12.3.20 Cleared, overgrown pasture	Non-remnant 12.3.20
	Regional Ecosystem	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.3.20	12.1.1	12.3.20	12.3.20	12.3.20	12.3.20	12.3.20
	Tree canopy (EDL) height	15	12	18	10	10	6	3	18	13	25	11	6	0	8
	Tree sub canopy height	7	4	5	5	3	2	0	5	6	15	7	3	0	2
	Emergent height													0	
SITE PHOTOS	Photo north from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Photo south from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Photo east from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Photo west from plot centre	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50x20m AREA	Coarse woody debris (m) (all logs >10cm diam; 0.5m long)	17	4.7	21.9	0.6	3.5	0	0	26	31.5	16.5	0	0	0	0
	Coarse woody debris (m/ha)	170	47	219	6	35	0	0	260	315	165	0	0	0	0
100x50m AREA	List native species from EDL	*Casuarina glauca* *Melaleuca quinquenervia* *Eucalyptus tereticornis*	*Casuarina glauca* *Eucalyptus tereticornis*	*Casuarina glauca*	*Casuarina glauca*	*Casuarina glauca*	*Casuarina glauca*	*Casuarina glauca*	*Casuarina glauca* *Melaleuca quinquenervia*	*Melaleuca quinquenervia*	*Casuarina glauca* *Eucalyptus tereticornis*	*Melaluca quinquenervia* *Casuarina glauca*	*Casuarina glauca* *Eucalyptus tereticornis*		*Casuarina glauca*
	Total number of native tree spp from EDL only	3	2	1	1	1	1	1	2	1	2	2	2	0	1
	List other native tree species not in EDL (tree = single stemmed and >2m)	*Cupaniopsis anacardioides*	*Eucalyptus siderophloia* *Melaleuca salicina*		*Melaleuca salicina* *Myrsine variabilis*				*Acacia disparrima*	*Casuarina glauca*	*Melaleuca quinquenervia* *Corymbia intermedia* *Lophostemon confertus* *Acacia disparrima* *Melaleuca salicina*	*Acacia concurrens* *Melaleuca salicina* *Glochidion sumanatrum* *Glochidion ferdinandi* *Melaleuca sp.* *Lophostemon suaveolons*	*Melaleuca quinquenervia* *Glochidion ferdinandi*		
	Lantana cover estimate (%)	0		3		0	0		0	0	10	6	1		0
	Total number of non-EDL species	1	2	0	2	0	0	0	1	1	5	1	3	0	0
	Total native tree spp richness (all tree species >2m + EDL) (Tree Richness)	4	4	1	3	1	1	1	3	2	7	8	5	0	1
	Total native tree spp from EDL recruiting	2	1	1	1	1	1	1	1	1	2	2	2	0	1
	Proportion of EDL Recruiting %	67	50	100	100	100	100	100	50	100	100	100	100	0	100
	Eucalypt large tree DBH	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Non-eucalypt large tree DBH	29	29	29	29	29	29	29	30	30	30	30	30	30	30
	Number of large eucalypt trees	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Number of large non-eucalypt trees	8	1	27	8	10	0	0	62	65		4	5	0	0
	Total large trees	8	1	27	8	10	0	0	62	65	29	8	5	0	0
50x10m AREA	List native shrub species	*Casuarina glauca* *Eucalyptus tereticornis* *Melaleuca quinquenervia* *Ficus rubiginosa* *Cupaniopsis anacardioides* *Acacia concurrens* *Enchylaena tomentosa*	*Casuarina glauca* *Eucalyptus tereticornis* *Melaleuca salicina* *Maclura cochinchinensis* *Eucalyptus siderophloia*		*Casuarina glauca* *Maclura cochinchinensis* *Melaleuca salicina* *Myrsine variabilis*		*Ludwigia octovalvis*		*Casuarina glauca*		*Casuarina glauca* *Melaleuca quinquenervia* *Alphitonia excelsa* *Acacia disparrima*	*Casuarina glauca* *Alphitonia excelsa* *Ghlochidion sumanatrum* *Melaleuca quinquenervia*	*Casuarina glauca* *Macular cochinchinensis* *Casuarina glauca* *Eucalyptus tereticornis* *Alphitonia excelsa*		*Urena lobata* *Casuarina glauca*
	Total number of native shrub species (Shrub Richness)	7	5	2	4	0	1	0	1	2	4	4	5	0	2
	List native grass species	*Sporobolus virginicus* *Paspalum distichum* *Zoysia macrantha* *Einadia nutans*	*Sporobolus virginicus* *Paspalum scrobiculatum* *Enteropogon acicularis* *Paspalidium distans* *Paspalum distichum*		*Sporobolus virginicus* *Paspalum scrobiculatum* *Paspalidium distans* *Enteropogon acicularis*	*Sporobolus virginicus* *Phragmites australis*	*Imperata cylindrica*	*Sporobolus virginicus* *Imperata cylindrica* *Phragmites australis*	*Phragmites australis* *Sporobolus virginicus (infertile)* *Hemarthria uncinate (infertile)*		*Ottochloa gracilima* *Imperata cylindrica* *Unknown 1* *Unknown 2*	*Sporobolus virginicus* *Imperata cylindrica* *Grass 1* *Panicum simile* *Grass 2*	*Imperata cylindrica* *Ottochloa gracilima* *Capillipedium spicigerum*		*Imperata cylindrica*
	Total number of native grass species (Grass Richness)	4	5	4	4	2	1	3	3	1	4	5	3	0	1
	List native forbs and other	*Fimbristylis ferruginea* *Alternanthera nana* *Notothixos subaureus* *Amyema cambagei* *Parsonsia straminea* *Cyperus polystachyos* *Juncus kraussii* *Commelina diffusa*	*Fimbristylis ferruginea* *Amyema cambagei* *Oxalis thompsoniae* *Dianella brevipedunculata* *Commelina diffusa* *Eustrephus latifolius*		*Bacopa monnieri* *Fimbristylis ferruginea* *Suaeda australis* *Eclipta platyglossa* *Alternanthera nana* *Parsonsia straminea* *Dianella brevipedunculata*	*Persicaria subsessilis* *Ranunculus inundatus* *Hydrocotyle verticillata* *Alternanthera denticulata* *Juncus usitatus* *Cyperaceae sp1* *Eleocharis dulcis* *Parsonsia straminea* *Gahnia clarkei* *Rumex brownii* *Baumea articulata* *Cyperaceae sp2* *Typha orientalis* *Commelina sp* *Neoachmandra cunninghamii* *Hydrocotyle acutifolia*	*Persicaria subsessilis* *Ranunculus inundatus* *Juncus usitatus* *Alternanthera* *Rumex brownii* *Cyperaceae sp1* *Cyperus polystachyos* *Cyperaceae sp2* *Bacopa monnieri*	*Reed 1* *Reed 2* *Ranunculus inundatus* *Persicaria attenuata* *Amaranthus sp.*	*Triglochin striatum* *Parsonsia straminea* *Alternanthera denticulata* *Centella asiatica*		*Lomandra hystrix* *Commelina diffusa* *Parsonsia straminea* *Pteridium esculentum* *Dianella sp.*	*Reed 1* *Forb 1* *Forb 2* *Parsonsia straminea* *Convolvulus sp* *viola sp* *Hydrocotyle acutifolia* *Forb 3* *Lobelia purpurascens* *Sedge 1* *Reed 2* *Dianella longifolia*	*Parsonsia straminea* *Centella asiatica* *Dianella longifolia* *Geitonoplesium cymosum* *Polymeria calycina* *Stephania japonica* *Cyperus polystachyos*	*Convolvulus sp* *viola sp* *Parsonsia straminea*	*Cyperus polystachyos* *Polymeria* *Ranunculus* *Centella asiatica* *Dianella brevipedunculata*
	Total number of native forbs and other species (Forbs Richness)	8	6	9	7	16	9	5	4	6	5	10	7	3	5
	Non native species	*Solanum seaforthianum*	*Passiflora pallida* *Solanum americanum* *Lantana camara* *Asparagus aethiopicus*		*Lantana camara* *Solanum seaforthianum* *Asparagus aethiopicus* *Emilia sonchifolia* *Sonchus oleraceus* *Passiflora pallida* *Baccharis halimifolia* *Ottochloa gracillima*	*Cuphea carthagenensis* *Solanum nigrum* *Tomato* *Biden pilosa* *Solanum seaforthianum* *Eclipta prostrata* *Setaria*	*Setaria sphacelata* *Cuphea carthagenensis* *Eclipta prostrata* *Paspalum urvillei* *Balloon cotton* *Aster subulatus* *Chloris gayana* *Baccharis halimifolia*	*Setaria sphacelata* *Chloris gayana* *Rumex crispus* *weed (forb)* *Gomphocarpus physocarpus* *Ambrosia artemisiifolia* *Solanum nigrum* *Malva parviflora* *Baccharis halimifolia* *Verbena sp* *Cuphea carthagenensis*	*Baccharis halimifolia*		*Lantana camara* *Passiflora suberosa*	*Lantana camara* *Passiflora suberosa* *Ageratum houstonianum* *Schinus terebinthifolius* *weed forb* *Baccharis halimifolia* *Setaria sphacelata*	*Solanum seaforthianum* *Schinus terebinthifolius* *Ageratum houstonianum* *Gomphocarpus physocarpus* *Aster subulatus* *Lantana camara* *Bidens pilosa* *Emelina sonchifolia* *Cuphea carthagenensis* *Senna pendula var. glabrata* *Solanum torvum* *Sida rhombifolia* *Paspalum mandiocanum* *Murraya paniculata* *Passiflora suberosa* *Passiflora foetida* *Verbena bonariensis*	*Setaria sphacelata* *Senecio madagascariensis* *Verbena sp* *Gomphocarpus physocarpus* *Sida sp* *weed forb* *Chloris gayana*	*Setaria sphacelata* *Baccharis halimifolia* *Senecio madagascariensis* *Chloris gayana* *Lantana camara* *Cynodon dactylon* *Billy goat* *Cuphea* *Aster* *Solanum nigrum* *Solanum mauritianum* *Conyza bonariensis* *Spear thistle* *Solanum seaforthianum* *Solanum sp*
	Non native % cover	0	0	20	2	1	60	75	1	0	5	5	10	95	95
Five 1x1m plots	Plot 1 Native perennial ('decreaser') grass cover %	95	85	2	85	5	0	30	10	60	88	0	80	0	95
	Plot 1 Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 1 Native forbs and other species %	0	0	10	0	0	2	0	80	0	0	1	5	0	0
	Plot 1 Native shrubs <1m %	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	Plot 1 Non-native grass %	0	0	0	0	0	98	70	0	0	0	0	5	100	0
	Plot 1 Non-native forbs and shrubs %	0	0	15	10	5	0	0	0	0	2	1	7	0	0
	Plot 1 Litter %	5	15	68	5	90	0	0	10	30	10	98	3	0	0
	Plot 1 Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 1 Bare ground %	0	0	5	0	0	0	0	0	10	0	0	0	0	0
	Plot 1 Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 1 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 2 Native perennial ('decreaser') grass cover %	90	95	5	10	25	0	0	12	50	75	10	85	0	0
	Plot 2 Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 2 Native forbs and other species %	0	0	5	0	0	4	0	83	0	0	0	5	0	0
	Plot 2 Native shrubs <1m %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 2 Non-native grass %	0	0	0	0	5	0	100	0	0	0	0	0	40	70
	Plot 2 Non-native forbs and shrubs %	0	0	5	80	0	66	0	0	0	0	0	0	1	10
	Plot 2 Litter %	10	5	80	10	70	30	0	5	50	20	80	10	59	20
	Plot 2 Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 2 Bare ground %	0	0	5	0	0	0	0	0	0	5	10	0	0	0
	Plot 2 Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Broad title	Attribute	AU1 - RE 12.1.1 Remnant	AU1 - RE 12.1.1 Remnant	AU1 - RE 12.1.1 Remnant	AU2 - RE 12.1.1 Regrowth	AU2 - RE 12.1.1 Regrowth	AU3 - RE 12.1.1 Non-remnant	AU3 - RE 12.1.1 Non-remnant	AU4 - RE 12.3.20 Remnant	AU4 - RE 12.3.20 Remnant	AU4 - RE 12.3.20 Remnant	AU5 - RE 12.3.20 Regrowth	AU5 - RE 12.3.20 Regrowth	AU6 - RE 12.3.20 Non-remnant	AU6 - RE 12.3.20 Non-remnant
LOCATION	Site ID	836-837	840-841	962-963	844a-844b	956-957	958-959	970-971	931-932	964-965	966-967	974-975	923-924	972-973	960-961
	Plot 2 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 3 Native perennial ('decreaser') grass cover %	90	80	5	30	5	0	0	0	30	40	26	20	0	0
	Plot 3 Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 3 Native forbs and other species %	0	0	5	0	0	0	0	15	0	2	0	35	0	0
	Plot 3 Native shrubs <1m %	1	0	0	0	0	5	0	0	0	5	10	0	0	0
	Plot 3 Non-native grass %	0	0	0	0	0	10	10	0	0	0	0	33	100	0
	Plot 3 Non-native forbs and shrubs %	0	0	75	0	0	0	0	0	0	0	1	0	0	20
	Plot 3 Litter %	9	20	15	35	95	85	90	85	70	35	65	12	0	80
	Plot 3 Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 3 Bare ground %	0	0	0	35	0	0	0	0	0	18	0	0	0	0
	Plot 3 Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 3 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 4 Native perennial ('decreaser') grass cover %	60	60	3	30	50	0	0	0	5	40	0	0	0	0
	Plot 4 Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Plot 4 Native forbs and other species %	0	0	0	0	0	20	0	0	65	0	3	0	5	
	Plot 4 Native shrubs <1m %	0	0	0	0	0	0	0	5	0	5	0	0	0	
	Plot 4 Non-native grass %	0	0	0	0	0	80	80	0	0	0	92	90	90	
	Plot 4 Non-native forbs and shrubs %	0	0	20	20	0	0	0	0	0	0	5	0	5	
	Plot 4 Litter %	40	40	62	30	50	0	20	95	30	55	97	0	10	0
	Plot 4 Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 4 Bare ground %	0	0	15	20	0	0	0	0	0	0	3	0	0	0
	Plot 4 Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 4 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Plot 5 Native perennial ('decreaser') grass cover %	45	90	40	15	5	0	1	59	10	66	10	0	0	0
	Plot 5 Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 5 Native forbs and other species %	0	0	0	0	0	0	0	1	80	2	0	0	0	0
	Plot 5 Native shrubs <1m %	0	0	0	0	0	0	0	0	0	2	1	0	0	0
	Plot 5 Non-native grass %	0	0	0	0	0	40	20	0	0	0	1	50	65	100
	Plot 5 Non-native forbs and shrubs %	0	0	0	0	0	0	10	0	0	0	1	3	0	0
	Plot 5 Litter %	55	10	60	40	95	60	69	40	10	30	86	47	35	0
	Plot 5 Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 5 Bare ground %	0	0	0	45	0	0	0	0	0	0	1	0	0	0
	Plot 5 Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Plot 5 Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
	Mean of all Plots Native perennial ('decreaser') grass cover %	76	82	11	34	18	0	6.2	16.2	31	61.8	9.2	37	0	19
	Mean of all Plots Native other grass (if relevant) %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mean of all Plots Native forbs and other species %	0	0	4	0	0	5.2	0	35.8	29	0.8	0.2	9.6	0	1
	Mean of all Plots Native shrubs <1m %	0.2	0	0	0	0	1	0	1	0	2.4	2.2	0	0	1
	Mean of all Plots Non-native grass %	0	0	0	0	1	45.6	56	0	0	0	0.2	36	79	52
	Mean of all Plots Non-native forbs and shrubs %	0	0	23	22	1	13.2	2	0	0	0.4	0.6	3	0.2	7
	Mean of all Plots Litter %	23.8	18	57	24	80	35	35.8	47	38	30	85.2	14.4	20.8	20
	Mean of all Plots Rock %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mean of all Plots Bare ground %	0	0	5	20	0	0	0	0	2	4.6	2.8	0	0	0
	Mean of all Plots Cryptograms %	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100m Transect	Canopy Total (m)	79.5	99.5	82.4	77.5	82.5	0	0	99.5	73.6	83	57	44.5	0	12.5
	Sub canopy total (m)	3.5	3	11.6	22	0	0	0	1.5	8	34	22	3.5	0	0
	Emergent canopy total (m)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Native Shrub total (m)	4	1	11.9	2.5	0	0	0	0.5	7	11	5.5	2	0	1
	Exotic Shrub total (m)	0	0	9.8	0	0	0	0	0	0	3	0	27	0	14
	Swamp oak canopy cover (m)		99.5	82.4	77.5	82.5	0	0	84.5	24	45	24.5	35.5	0	12.5
	Swamp oak canopy cover (% of canopy)	0	100	100	100	100	0	0	84.9	32.6	54.2	43.0	79.8	0	100
	Koala tree species canopy cover (m)		8.5	0	0	0	0	0	33	49.6	50	50.5	12.5	0	0
	Koala tree species canopy cover (% of canopy)	0	8.5	0	0	0	0	0	33.2	67.4	60.2	88.6	28.1	0	0

Appendix J: Offset HQS tables Coastal Swamp Oak TEC

TABLE A5.1 **GREENRIDGE AU1 RE 12.1.1 REMNANT START QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **8**

Assessment Unit - Regional Ecosystem	AU 1 - RE 12.1.1 Remnant												
Site Reference	Benchmark	Site 836-837			Site 840-841			Site 962-963			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	66.7	66.7	3	50.0	50.0	1	100.0	100.0		72.2	
Native plant species richness - trees	1	4	400.0	5	4.0	400.0	5	1.0	100.0		300.0	
Native plant species richness - shrubs	1	7	700.0	5	5.0	500.0	5	2.0	200.0		466.7	
Native plant species richness - grasses	2	4	200.0	5	5.0	250.0	5	4.0	200.0		216.7	
Native plant species richness - forbs	3	8	266.7	5	6.0	200.0	5	9.0	300.0		255.6	
Tree canopy height	12	15	125.0	5	12.0	100.0	5	13.0	108.3		111.1	
Tree subcanopy height	7	7	100.0	5	4.0	57.1	1	6.0	85.7		81.0	
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	11	115.8	5	8.0	84.2	5	9.5	100.0		100.0	
Tree canopy cover (EDL)	67	79.5	118.7	5	99.5	148.4	5	82.4	123.0		130.0	
Subcanopy cover	23	3.5	15.2	2	3.0	13.0	1	11.6	50.4		26.2	
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	41.5	92.2	5	51.1	113.5	5	47.0	104.4		103.5	
Shrub canopy cover	5	4	80.0	5	1.0	20.0	1	11.9	238.0		112.7	
Native grass cover	85	76	89.4	3	82.0	96.5	5	11.0	12.9		66.3	
Organic litter	5	23.8	476.0	5	18.0	360.0	5	57.0	1140.0		658.7	
Total large trees per hectare	92	16	17.4	1	2.0	2.2	1	54.0	58.7	1	26.0	
Coarse woody debris (m/ha)	360	170	47.2	2	47.0	13.1	1	219.0	60.8		40.0	
Non-native plant cover	0	0		10	0.0		10	20.0			6.7	1
Site Condition Score				61			61			62		61.0
MAX Site Condition Score				*80*			*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**				**Average**	**Average Score**
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	1	105.0	1
Connectivity												
Remnant %			95.0			91.1			31.3		72.4	
Regrowth %				5			1		19.2		19.2	
Context												
Remnant %			68.7			62.5			49.1		60.1	
Regrowth %			1.0	4		1.0	1		1.3		1.1	
Site Context Score				19			19			16		18.0
MAX Site Context Score				*20*			*20*			*20*		*20*
Total habitat quality score /100				**80.00**			**80.00**			**78.00**		**79.00**
MAX Habitat Quality Score				***100***			***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Fina**
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	6.08
Size Weighting	1.00						
Weighted Habitat Quality Score	***7.90***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***7.90***

TABLE A5.2 **GREENRIDGE AU1 RE 12.1.1 REMNANT WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **7**

Assessment Unit - Regional Ecosystem	AU 1 - RE 12.1.1 Remnant											
Site Reference	Benchmark	Site 836-837			Site 840-841			Site 962-963			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	66.7	66.7	3	50.0	50.0	1	100.0	100.0	3	72.2	3
Native plant species richness - trees	1	4	400.0	5	4.0	400.0	5	1.0	100.0	3	300.0	5
Native plant species richness - shrubs	1	7	700.0	5	5.0	500.0	5	2.0	200.0	3	466.7	5
Native plant species richness - grasses	2	4	200.0	5	5.0	250.0	5	4.0	200.0	5	216.7	5
Native plant species richness - forbs	3	8	266.7	5	6.0	200.0	5	9.0	300.0	5	255.6	5
Tree canopy height	12	15	125.0	5	12.0	100.0	3	13.0	108.3	5	111.1	5
Tree subcanopy height	7	7	100.0	5	4.0	57.1	1	6.0	85.7	5	81.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	11	115.8	5	8.0	84.2	5	9.5	100.0	5	100.0	5
Tree canopy cover (EDL)	67	79.5	118.7	5	99.5	148.5	5	82.6	123.0	5	130.6	5
Subcanopy cover	23	3.5	15.4	2	3.4	13.4	2	11.6	50.4	3	26.4	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	41.5	92.2	5	51.5	113.5	5	47.0	104.4	5	103.5	5
Shrub canopy cover	5	4	80.0	3	1.0	20.0	1	11.9	238.0	5	112.7	5
Native grass cover	85	76	89.4	3	82.0	96.5	5	11.0	12.9	1	66.3	3
Organic litter	9	23.8	476.6	3	18.0	360.0	3	57.6	1140.0	3	658.8	3
Total large trees per hectare	92	16	17.4	1	2.0	2.2	1	54.0	58.7	1	26.1	1
Coarse woody debris (m/ha)	360	170	47.2	2	47.0	13.1	1	219.0	60.8	2	40.4	2
Non-native plant cover	0	0		5	0.0		5	20.0		1	6.7	3
Site Condition Score				54			54			59		52.0
MAX Site Condition Score				*80*			*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**				**Average**	**Average Score**
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
Remnant %			95.6			91.4			31.2		72.7	
Regrowth %				5			5		19.2		19.2	4
Context												
Remnant %			68.7			62.9			49.5		60.4	
Regrowth %			1.0	4		1.0	4		1.3		1.1	4
Site Context Score				19			19			16		18.0
MAX Site Context Score				*20*			*20*			*20*		*20*
Total habitat quality score /100				**73.00**			**73.00**			**75.00**		**70.00**
MAX Habitat Quality Score				***100***			***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	5.66
Size Weighting	1.00						
Weighted Habitat Quality Score	***7.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***7.00***

TABLE A5.3 **GREENRIDGE AU1 RE 12.1.1 REMNANT WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE:	9

Assessment Unit - Regional Ecosystem	AU 1 - RE 12.1.1 Remnant											
Site Reference	Benchmark	Site 836-837			Site 840-841			Site 962-963			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	66.7	66.7	5	50.0	50.0	5	100.0	100.0	5	72.2	5
Native plant species richness - trees	1	4	400.0	5	4.0	400.0	5	1.0	100.0	5	300.0	5
Native plant species richness - shrubs	1	7	700.0	5	5.0	500.0	5	2.0	200.0	5	466.7	5
Native plant species richness - grasses	2	4	200.0	5	5.0	250.0	5	4.0	200.0	5	216.7	5
Native plant species richness - forbs	3	8	266.7	5	6.0	200.0	5	9.0	300.0	5	255.6	5
Tree canopy height	12	15	125.0	5	12.0	100.0	5	13.0	108.3	5	111.1	5
Tree subcanopy height	7	7	100.0	3	4.0	57.1	5	6.0	85.7	5	81.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	11	115.8	5	8.0	84.2	5	9.5	100.0	5	100.0	5
Tree canopy cover (EDL)	67	79.5	118.7	5	99.5	148.5	5	82.4	123.0	5	130.0	5
Subcanopy cover	23	3.5	15.2	5	3.0	13.0	5	11.6	50.4	5	26.2	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	41.5	92.2	5	51.3	113.9	5	47.0	104.4	5	103.5	5
Shrub canopy cover	5	4	80.0	5	1.0	20.0	5	11.9	238.0	5	112.7	5
Native grass cover	85	76	89.4	5	82.0	96.5	5	11.0	12.9	5	66.3	5
Organic litter	5	23.8	476.0	5	18.0	360.0	5	57.0	1140.0	5	658.7	5
Total large trees per hectare	92	16	17.4	10	2.0	2.2	10	54.0	58.7	10	26.1	5
Coarse woody debris (m/ha)	360	170	47.2	5	47.0	13.1	5	219.0	60.8	5	40.4	5
Non-native plant cover	0	0		10	0.0		10	20.0		10	6.7	10
Site Condition Score				75			75			73		70.0
MAX Site Condition Score				*80*			*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**				**Average**	**Average Score**
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
Remnant %			95.0			91.2			31.3		72.5	
Regrowth %				5			5		19.2	2	19.2	4
Context												
Remnant %			68.7			62.5			49.1		60.1	
Regrowth %			1.0	4		1.0	4		1.3	4	1.1	4
Site Context Score				19			19			16		18.0
MAX Site Context Score				*20*			*20*			*20*		*20*
Total habitat quality score /100				**94.00**			**94.00**			**89.00**		**88.00**
MAX Habitat Quality Score				***100***			***100***			***100***		***100***

Final habitat quality score (weighted)	AU1 RE 12.1.1 Remnant	AU2 RE 12.1.1 Regrowth	AU3 RE 12.1.1 Non-remnant	AU4 RE12.3.20 Remnant	AU5 RE 12.3.20 Regrowth	AU6 RE 12.3.20 Non-remnant	Average/Fina
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	8.53
Size Weighting	1.00						
Weighted Habitat Quality Score	***8.80***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***8.80***

TABLE A5.4 GREENRIDGE AU2 RE 12.1.1 REGROWTH START QUALITY FOR COASTAL SWAMP OAK TEC

START SCORE: 7

Assessment Unit - Regional Ecosystem	AU2 - RE 12.1.1 Regrowth								
Site Reference	Benchmark	Site 844a-844b			Site 956-957				
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	3	300.0	5	1	100.0	5	200.0	5
Native plant species richness - shrubs	1	4	400.0	5	0	0.0	0	200.0	5
Native plant species richness - grasses	2	4	200.0	5	2	100.0	5	150.0	5
Native plant species richness - forbs	3	7	233.3	5	16	533.3	5	383.3	5
Tree canopy height	12	10	83.3	5	10	83.3	5	83.3	5
Tree subcanopy height	7	5	71.4	5	3	42.9	3	57.1	3
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	7.5	78.9	5	6.5	68.4	3	73.7	5
Tree canopy cover (EDL)	67	77.5	115.7	5	82.5	123.1	5	119.4	5
Subcanopy cover	23	22	95.7	5	0	0.0	0	47.8	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	49.75	110.6	5	41.3	91.7	5	101.1	5
Shrub canopy cover	5	2.5	50.0	5	0	0.0	0	25.0	3
Native grass cover	85	34	40.0	1	18	21.2	1	30.6	1
Organic litter	5	24	480.0	3	80	1600.0	3	1040.0	3
Total large trees per hectare	92	16	17.4	5	20	21.7	5	19.6	5
Coarse woody debris (m/ha)	360	6	1.7	0	35	9.7	0	5.7	0
Non-native plant cover	0	2		10	1		10	1.5	10
Site Condition Score				59			47		57
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			883.3			884.3		883.8	
Regrowth			3.0	10		2.0	10	2.5	10
Connectivity									
Remnant %			44.5			6.0		25.2	
Regrowth %				2			0		2
Context									
Remnant %			60.5			28.0		44.2	
Regrowth %			1.0	4		3.4	2	2.2	4
Site Context Score				16			12		16
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**75.00**			**59.00**		**73.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quality Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	*6.08*
Size Weighting		1.00					
Weighted Habitat Quality Score	***0.00***	***7.30***	***0.00***	***0.00***	***0.00***	***0.00***	***7.30***

TABLE A5.5 GREENRIDGE AU2 RE 12.1.1 REGROWTH WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC

START SCORE: 7

Assessment Unit - Regional Ecosystem	AU2 - RE 12.1.1 Regrowth								
Site Reference	Benchmark	Site 844a-844b			Site 956-957			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	3	300.0	5	1	100.0	5	200.0	5
Native plant species richness - shrubs	1	4	400.0	5	0	0.0	0	200.0	5
Native plant species richness - grasses	2	4	200.0	5	2	100.0	5	150.0	5
Native plant species richness - forbs	3	7	233.3	5	16	533.3	5	383.3	5
Tree canopy height	12	10	83.3	5	10	83.3	5	83.3	5
Tree subcanopy height	7	5	71.4	5	3	42.9	3	57.1	3
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	7.5	78.9	5	6.5	68.4	3	73.7	5
Tree canopy cover (EDL)	67	77.5	115.7	3	82.5	123.1	5	119.4	5
Subcanopy cover	23	22	95.7	5	0	0.0	0	47.8	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	49.75	110.6	5	41.3	91.7	5	101.1	5
Shrub canopy cover	5	2.5	50.0	3	0	0.0	0	25.0	1
Native grass cover	85	34	40.0	1	18	21.2	1	30.6	1
Organic litter	5	24	480.0	3	80	1600.0	3	1040.0	3
Total large trees per hectare	92	16	17.4	10	20	21.7	10	19.6	10
Coarse woody debris (m/ha)	360	6	1.7	0	35	9.7	0	5.7	0
Non-native plant cover	0	2		5	1		5	1.5	5
Site Condition Score				57			47		55
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			883.3			884.3		883.8	
Regrowth			3.0	10		2.0	10	2.5	10
Connectivity									
Remnant %			44.5			6.0		25.2	
Regrowth %				2			0		2
Context									
Remnant %			60.5			28.0		44.2	
Regrowth %			1.0	4		3.4	2	2.2	4
Site Context Score				16			12		16
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**73.00**			**59.00**		**71.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quality Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	5.66
Size Weighting		1.00					
Weighted Habitat Quality Score	***0.00***	***7.10***	***0.00***	***0.00***	***0.00***	***0.00***	***7.10***

TABLE A5.6 GREENRIDGE AU2 RE 12.1.1 REGROWTH WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC

START SCORE: 9

Assessment Unit - Regional Ecosystem	AU2 - RE 12.1.1 Regrowth								
Site Reference	Benchmark	Site 844a-844b			Site 956-957			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	3	300.0	5	1	100.0	5	200.0	5
Native plant species richness - shrubs	1	4	400.0	5	0	0.0	1	200.0	5
Native plant species richness - grasses	2	4	200.0	5	2	100.0	1	150.0	5
Native plant species richness - forbs	3	7	233.3	5	16	533.3	1	383.3	5
Tree canopy height	12	10	83.3	5	10	83.3	1	83.3	1
Tree subcanopy height	7	5	71.4	5	3	42.9	1	57.1	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	7.5	78.9	5	6.5	68.4	1	73.7	5
Tree canopy cover (EDL)	67	77.5	115.7	5	82.5	123.1	5	119.4	5
Subcanopy cover	23	22	95.7	5	0	0.0	2	47.8	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	49.75	110.6	5	41.3	91.7	5	101.1	5
Shrub canopy cover	5	2.5	50.0	5	0	0.0	1	25.0	1
Native grass cover	85	34	40.0	3	18	21.2	1	30.6	1
Organic litter	5	24	480.0	5	80	1600.0	5	1040.0	5
Total large trees per hectare	92	16	17.4	10	20	21.7	10	19.6	10
Coarse woody debris (m/ha)	360	6	1.7	5	35	9.7	5	5.7	5
Non-native plant cover	0	2		10	1		10	1.5	10
Site Condition Score				73			73		73
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			883.3			884.3		883.8	
Regrowth			3.0	10		2.0	10	2.5	10
Connectivity									
Remnant %			44.5			6.0		25.2	
Regrowth %				2			0		2
Context									
Remnant %			60.5			28.0		44.2	
Regrowth %			1.0	4		3.4	2	2.2	4
Site Context Score				16			12		16
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**89.00**			**85.00**		**89.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	*8.53*
Size Weighting		1.00					
Weighted Habitat Quality Score	***0.00***	***8.90***	***0.00***	***0.00***	***0.00***	***0.00***	***8.90***

TABLE A5.7 **GREENRIDGE AU3 RE 12.1.1 NON-REMNANT START QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **3**

Assessment Unit - Regional Ecosystem	AU3 - RE 12.1.1 Non-remnant								
Site Reference	Benchmark	Site 958-959			Site 970-971				
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	1	100.0	5	1	100.0	5	100.0	5
Native plant species richness - shrubs	1	1	100.0	5	0	0.0	0	50.0	2.5
Native plant species richness - grasses	2	1	50.0	2.5	3	150.0	5	100.0	5
Native plant species richness - forbs	3	9	300.0	5	5	166.7	5	233.3	5
Tree canopy height	12	6	50.0	3	3	25.0	3	37.5	3
Tree subcanopy height	7	2	28.6	3	0	0.0	0	14.3	0
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	4	42.1	3	1.5	15.8	0	28.9	3
Tree canopy cover (EDL)	67	0	0.0	0	0	0.0	0	0.0	0
Subcanopy cover	23	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	0	0.0	0	0.0	0
Shrub canopy cover	5	0	0.0	0		0.0	0	0.0	0
Native grass cover	85	0	0.0	0	6.2	7.3	0	3.6	0
Organic litter	5	35	700.0	3	35.8	716.0	3	708.0	3
Total large trees per hectare	92	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	360	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	60		0	75	67.5	0	67.5	0
Site Condition Score				28.5			23		28.5
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			0.0			0		0.0	
Regrowth			0.0	0		0	0	0.0	0
Connectivity									
Remnant %						0		0.0	
Regrowth %			39.0	2		6.33	0	22.7	0
Context									
Remnant %			31.5			33.05		32.3	
Regrowth %			3.3	4		7.7	4	5.5	4
Site Context Score				6			4		4
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**34.50**			**27.00**		**32.50**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	6.08
Size Weighting			1.00				
Weighted Habitat Quality Score	***0.00***	***0.00***	***3.25***	***0.00***	***0.00***	***0.00***	***3.25***

TABLE A5.8 **GREENRIDGE AU3 RE 12.1.1 NON-REMNANT WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **3**

Assessment Unit - Regional Ecosystem	AU3 - RE 12.1.1 Non-remnant								
Site Reference	Benchmark	Site 958-959			Site 970-971			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	1	100.0	5	1	100.0	5	100.0	5
Native plant species richness - shrubs	1	1	100.0	5	0	0.0	0	50.0	2.5
Native plant species richness - grasses	2	1	50.0	2.5	3	150.0	5	100.0	5
Native plant species richness - forbs	3	9	300.0	5	5	166.7	5	233.3	5
Tree canopy height	12	6	50.0	0	3	25.0	3	37.5	0
Tree subcanopy height	7	2	28.6	0	0	0.0	0	14.3	0
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	4	42.1	0	1.5	15.8	0	28.9	0
Tree canopy cover (EDL)	67	0	0.0	0	0	0.0	0	0.0	0
Subcanopy cover	23	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	0	0.0	0	0.0	0
Shrub canopy cover	5	0	0.0	0		0.0	0	0.0	0
Native grass cover	85	0	0.0	0	6.2	7.3	0	3.6	0
Organic litter	5	35	700.0	3	35.8	716.0	3	708.0	3
Total large trees per hectare	92	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	360	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	60		0	75		0	67.5	0
Site Condition Score				25.5			23		25.5
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			0.0			0		0.0	
Regrowth			0.0	0		0	0	0.0	0
Connectivity									
Remnant %						0		0.0	
Regrowth %			39.0	2		6.33	0	22.7	0
Context									
Remnant %			31.5			33.05		32.3	
Regrowth %			3.3	4		7.7	4	5.5	4
Site Context Score				6			4		4
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**31.50**			**27.00**		**29.50**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	AU1 RE 12.1.1 Remnant	AU2 RE 12.1.1 Regrowth	AU3 RE 12.1.1 Non-remnant	AU4 RE12.3.20 Remnant	AU5 RE 12.3.20 Regrowth	AU6 RE 12.3.20 Non-remnant	Average/Final
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	*5.66*
Size Weighting			1.00				
Weighted Habitat Quality Score	***0.00***	***0.00***	***2.95***	***0.00***	***0.00***	***0.00***	***2.95***

TABLE A5.9 GREENRIDGE AU3 RE 12.1.1 NON-REMNANT WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC

START SCORE: 7

Assessment Unit - Regional Ecosystem	AU3 - RE 12.1.1 Non-remnant								
Site Reference	Benchmark	Site 958-959			Site 970-971			Average % benchmark	Average Score
	12.1.1	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	1	1	100.0	5	1	100.0	5	100.0	5
Native plant species richness - shrubs	1	1	100.0	5	0	0.0	0	50.0	5
Native plant species richness - grasses	2	1	50.0	5	3	150.0	5	100.0	5
Native plant species richness - forbs	3	9	300.0	5	5	166.7	5	233.3	5
Tree canopy height	12	6	50.0	5	3	25.0	0	37.5	5
Tree subcanopy height	7	2	28.6	5	0	0.0	0	14.3	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	4	42.1	5	1.5	15.8	0	28.9	5
Tree canopy cover (EDL)	67	0	0.0	5	0	0.0	0	0.0	5
Subcanopy cover	23	0	0.0	5	0	0.0	0	0.0	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	5	0	0.0	0	0.0	5
Shrub canopy cover	5	0	0.0	5		0.0	0	0.0	5
Native grass cover	85	0	0.0	5	6.2	7.3	0	3.6	5
Organic litter	5	35	700.0	5	35.8	716.0	0	708.0	5
Total large trees per hectare	92	0	0.0	5	0	0.0	0	0.0	5
Coarse woody debris (m/ha)	360	0	0.0	5	0	0.0	0	0.0	5
Non-native plant cover	0	60		5	75		0	67.5	5
Site Condition Score				65			63		65.0
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			0.0			0		0.0	
Regrowth			0.0	0		0	0	0.0	0
Connectivity									
Remnant %						0		0.0	
Regrowth %			39.0	2		6.33	0	22.7	0
Context									
Remnant %			31.5			33.05		32.3	
Regrowth %			3.3	4		7.7	4	5.5	4
Site Context Score				6			4		4
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**71.00**			**67.00**		**69.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	AU1 RE 12.1.1 Remnant	AU2 RE 12.1.1 Regrowth	AU3 RE 12.1.1 Non-remnant	AU4 RE12.3.20 Remnant	AU5 RE 12.3.20 Regrowth	AU6 RE 12.3.20 Non-remnant	Average/Final
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	*8.53*
Size Weighting			1.00				
Weighted Habitat Quality Score	***0.00***	***0.00***	***6.90***	***0.00***	***0.00***	***0.00***	***6.90***

TABLE A5.10 **GREENRIDGE AU4 RE 12.3.20 REMNANT START QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **8**

Assessment Unit - Regional Ecosystem	AU4 - RE 12.3.20 Remnant												
Site Reference	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score	
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			
Site Condition													
Recruitment of woody perennial species in EDL	100	50	50.0	3	100	100.0	5	100	100	5	83.3	5	
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	4	175	5	100.0	5	
Native plant species richness - shrubs	4	2	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5	
Native plant species richness - grasses	2	3	150.0	5	1	50.0	2.5	4	200	5	133.3	5	
Native plant species richness - forbs	8	4	50.0	2.5	6	75.0	2.5	5	62.5	2.5	62.5	2.5	
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5	
Tree subcanopy height	8	5	62.5	3	8	100.0	5	15	187.5	5	116.7	5	
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5	
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	82	118.6	5	122.0	5	
Subcanopy cover	20	1.5	7.5	0	8	40.0	2	34	170	5	72.5	5	
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5	
Shrub canopy cover	15	0.5	3.3	0	7	46.7	3	11	73.3	5	41.1	3	
Native grass cover	20	16.2	81.0	3	31.0	155.0	5	61.8	309	5	181.7	5	
Organic litter	30	47	156.7	5	38	126.7	5	30	100	5	127.8	5	
Total large trees per hectare	165	124	75.2	10	130	78.8	10	58	35.2	5	63.0	10	
Coarse woody debris (m/ha)	890	260	29.2	2	315.0	35.4	2	165	18.5	1	27.7	2	
Non-native plant cover	0	1		10	0		10	5		5	2.0	10	
Site Condition Score				55.5			60			59.5		65.0	
MAX Site Condition Score				*80*			*80*			*80*		*80*	
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**	
Size of patch (ha)													
Remnant			781.3			781.3			781.3		781.3		
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10	
Connectivity													
Remnant %			99.4			99.4			68.2		89.0		
Regrowth %				5			5		4.0	4		5	
Context													
Remnant %			52.2			52.2			68.7		57.7		
Regrowth %			2.9	4		2.9	4		1.0	4	2.3	4	
Site Context Score				19			19			18		19.0	
MAX Site Context Score				*20*			*20*			*20*		*20*	
Total habitat quality score /100				**74.50**			**79.00**			**77.50**		**84.00**	
MAX Habitat Quality Score				***100***			***100***			***100***		***100***	

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Fina**
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	*6.08*
Size Weighting				1.00			
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***8.40***	***0.00***	***0.00***	***8.40***

TABLE A5.11 **GREENRIDGE AU4 RE 12.3.20 REMNANT WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **7**

Assessment Unit - Regional Ecosystem	AU3 - RE 12.1.1 Non-remnant		AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark	Site 958-959	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
	12.1.1	Raw Data	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition														
Recruitment of woody perennial species in EDL	100	100	100	50	50.0	3	100	100.0	3	100	100	3	83.3	3
Native plant species richness - trees	1	1	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	1	1	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	1	2	3	150.0	2.5	1	50.0	2.5	4	200	2.5	133.3	2.5
Native plant species richness - forbs	3	9	8	4	50.0	0	6	75.0	2.5	5	62.5	2.5	62.5	2.5
Tree canopy height	12	6	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	7	2	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	9.5	4	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	67	0	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	23	0	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	5	0	15	0.5	3.3	0	7	46.7	3	11	73.3	5	41.1	3
Native grass cover	85	0	20	16.2	81.0	3	31.0	155.0	5	61.8	309	5	181.7	3
Organic litter	5	35	30	47	156.7	3	38	126.7	3	30	100	5	127.8	5
Total large trees per hectare	92	0	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	360	0	890	260	29.2	2	315.0	35.4	2	165	18.5	2	27.7	2
Non-native plant cover	0	60	0	1		5	0		5	5		5	2.0	5
Site Condition Score						43.5			51			58		53.5
MAX Site Condition Score						*80*			*80*			*80*		*80*
Site Context					**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)														
Remnant					781.3			781.3			781.3		781.3	
Regrowth					105.0	10		105.0	10		105.0	10	105.0	10
Connectivity														
Remnant %					99.4			99.4			68.2		89.0	
Regrowth %						5			5		4.0	4		5
Context														
Remnant %					52.2			52.2			68.7		57.7	
Regrowth %					2.9	4		2.9	4		1.0	4	2.3	4
Site Context Score						19			19			18		19.0
MAX Site Context Score						*20*			*20*			*20*		*20*
Total habitat quality score /100						**62.50**			**70.00**			**76.00**		**72.50**
MAX Habitat Quality Score						***100***			***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quality Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.70	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	5.66
Size Weighting				1.00			
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***7.25***	***0.00***	***0.00***	***7.25***

TABLE A5.12 **GREENRIDGE AU4 RE 12.3.20 REMNANT WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: 9

Assessment Unit - Regional Ecosystem	AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	5	100	100.0	5	100	100	5	83.3	5
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	5	1	50.0	5	4	200	5	133.3	5
Native plant species richness - forbs	8	4	50.0	2.5	6	75.0	2.5	5	62.5	5	62.5	5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	3	7	46.7	5	11	73.3	5	41.1	5
Native grass cover	20	16.2	81.0	5	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	5	38	126.7	5	30	100	5	127.8	5
Total large trees per hectare	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	5	315.0	35.4	5	165	18.5	5	27.7	5
Non-native plant cover	0	1		10	0		10	5		10	2.0	10
Site Condition Score				65.5			67.5			75		72.5
MAX Site Condition Score				*80*			*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
Remnant %			99.4			99.4			68.2		89.0	
Regrowth %				5			5		4.0	4		5
Context												
Remnant %			52.2			52.2			68.7		57.7	
Regrowth %			2.9	4		2.9	4		1.0	4	2.3	4
Site Context Score				19			19			18		19.0
MAX Site Context Score				*20*			*20*			*20*		*20*
Total habitat quality score /100				**84.50**			**86.50**			**93.00**		**91.50**
MAX Habitat Quality Score				***100***			***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Fina**
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quality Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	*8.53*
Size Weighting				1.00			
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***9.15***	***0.00***	***0.00***	*9.15*

TABLE A5.13 **GREENRIDGE AU5 RE 12.3.20 REGROWTH START QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE:	**7**

Assessment Unit - Regional Ecosystem	AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924				
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	3	6	37.5	3	53.1	3
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	3
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	2	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	3	25.0	3
Native grass cover	20	9.2	46.0	1	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	3	14	46.7	3	165.3	5
Total large trees per hectare	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	5		5	10		5	7.5	5
Site Condition Score				52			51.5		56.0
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
Remnant %			79.87			29.5		54.69	
Regrowth %			0	5		6	2	0.0	4
Context									
Remnant %			52.65			39.82		46.24	
Regrowth %			9.11	4		9.85	4	9.48	4
Site Context Score				19			6		18
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**71.00**			**57.50**		**74.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	6.08
Size Weighting					1.00		
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***7.40***	***0.00***	***7.40***

TABLE A5.14 **GREENRIDGE AU5 RE 12.3.20 REGROWTH WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE: **7**

Assessment Unit - Regional Ecosystem	AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924				
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	3	53.1	5
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	2	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	3	25.0	3
Native grass cover	20	9.2	46.0	1	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	3	14	46.7	3	165.3	5
Total large trees per hectare	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	5		5	10		5	7.5	5
Site Condition Score				50			49.5		56.0
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
Remnant %			79.87			29.5		54.69	
Regrowth %			0	5		0	2	0.0	4
Context									
Remnant %			52.65			39.82		46.24	
Regrowth %			9.11	4		9.85	4	9.48	4
Site Context Score				19			6		18
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**69.00**			**55.50**		**74.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.43	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	*5.66*
Size Weighting					1.00		
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***7.40***	***0.00***	***7.40***

TABLE A5.15 **GREENRIDGE AU5 RE 12.3.20 REGROWTH WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE:	**9**

Assessment Unit - Regional Ecosystem	AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	5	53.1	5
Tree subcanopy height	8	7	87.5	5	4	37.5	1	62.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	1	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	1	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	5	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	1	70.6	5
Shrub canopy cover	15	5.5	36.7	5	2	13.3	5	25.0	5
Native grass cover	20	9.2	46.0	5	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	5	14	46.7	5	165.3	5
Total large trees per hectare	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	5		10	10		10	7.5	10
Site Condition Score				70			68		70.0
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
Remnant %			79.87			29.5		54.69	
Regrowth %			0	5		0	1	0.0	4
Context									
Remnant %			52.65			39.82		46.24	
Regrowth %			9.11	4		9.89	4	9.48	4
Site Context Score				19			6		18
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**89.00**			**74.00**		**88.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	*8.53*
Size Weighting					1.00		
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***8.80***	***0.00***	***8.80***

TABLE A5.16 GREENRIDGE AU6 RE 12.3.20 NON-REMNANT START QUALITY FOR COASTAL SWAMP OAK TEC

START SCORE: 2

Assessment Unit - Regional Ecosystem	AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961				
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100.0	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25.0	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	2	50.0	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50.0	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50.0	3	25.0	3
Tree subcanopy height	8	0	0.0	0	2	25.0	3	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	3	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	1	8.9	0
Subcanopy cover	20	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	1	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95.0	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Total large trees per hectare	165	0	0.0	0	0		15	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95	0.0	0	95.0	0
Site Condition Score				7.5			45		16.5
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			0			0		0.0	
Regrowth			0	0		0	0	0.0	0
Connectivity									
Remnant %			28.12			28.12		28.1	
Regrowth %			20.5	2		20.5	2	20.5	2
Context									
Remnant %			33.5			64.05		48.8	
Regrowth %			8.94	4		5.67	4	7.3	4
Site Context Score				6			6		6
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**13.50**			**51.00**		**22.50**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	AU1 RE 12.1.1 Remnant	AU2 RE 12.1.1 Regrowth	AU3 RE 12.1.1 Non-remnant	AU4 RE12.3.20 Remnant	AU5 RE 12.3.20 Regrowth	AU6 RE 12.3.20 Non-remnant	Average/Final
Habitat Quality Score (measured /100)	79.00	73.00	32.50	84.00	74.00	22.50	60.83
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.90	7.30	3.25	8.40	7.40	2.25	6.08
Size Weighting						1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***2.25***	***2.25***

TABLE A5.17 **GREENRIDGE AU6 RE 12.3.20 NON-REMNANT WITHOUT OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE:	**2**

Assessment Unit - Regional Ecosystem	AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100.0	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25.0	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	2	50.0	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50.0	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50.0	3	25.0	3
Tree subcanopy height	8	0	0.0	0	2	25.0	3	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	3	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	2	8.9	0
Subcanopy cover	20	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	2	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95.0	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Total large trees per hectare	165	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95	0.0	0	95.0	0
Site Condition Score				7.5			30		16.5
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			0			0		0.0	
Regrowth			0	0		0	0	0.0	0
Connectivity									
Remnant %			28.12			28.12		28.1	
Regrowth %			20.5	2		20.5	2	20.5	2
Context									
Remnant %			33.5			64.05		48.8	
Regrowth %			8.94	4		5.67	4	7.3	4
Site Context Score				6			6		6
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**13.50**			**36.00**		**22.50**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	70.00	71.00	29.50	72.50	74.00	22.50	56.58
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	7.00	7.10	2.95	7.25	7.40	2.25	*5.66*
Size Weighting						1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***2.25***	***2.25***

TABLE A5.18 **GREENRIDGE AU6 RE 12.3.20 NON-REMNANT WITH OFFSET QUALITY FOR COASTAL SWAMP OAK TEC**

START SCORE:	**9**

Assessment Unit - Regional Ecosystem	AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	5	100	100.0	5	50.0	5
Native plant species richness - trees	4	0	0.0	5	1	25.0	5	12.5	5
Native plant species richness - shrubs	4	0	0.0	5	2	50.0	5	25.0	5
Native plant species richness - grasses	2	0	0.0	5	1	50.0	5	25.0	5
Native plant species richness - forbs	8	3	37.5	5	5	62.5	5	50.0	5
Tree canopy height	16	0	0.0	5	8	50.0	5	25.0	5
Tree subcanopy height	8	0	0.0	5	2	25.0	5	12.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	5	5	41.7	5	20.8	5
Tree canopy cover (EDL)	70	0	0.0	5	12.5	17.9	5	8.9	5
Subcanopy cover	20	0	0.0	5	0	0.0	5	0.0	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	5	6.25	13.9	5	6.9	5
Shrub canopy cover	15	0	0.0	5	1	6.7	5	3.3	5
Native grass cover	20	0	0.0	5	19	95.0	5	47.5	5
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Total large trees per hectare	165	0	0.0	5	0	0.0	5	0.0	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	95		10	95	0.0	10	95.0	10
Site Condition Score				70			70		70.0
MAX Site Condition Score				*80*			*80*		*80*
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			19.75			654.84		337.3	
Regrowth			22.02	2		34.02	10	28.0	10
Connectivity									
Remnant %			28.12			28.12		28.1	
Regrowth %			20.5	2		20.5	2	20.5	2
Context									
Remnant %			33.5			64.05		48.8	
Regrowth %			8.94	4		5.67	4	7.3	4
Site Context Score				8			16		16
MAX Site Context Score				*20*			*20*		*20*
Total habitat quality score /100				**78.00**			**86.00**		**86.00**
MAX Habitat Quality Score				***100***			***100***		***100***

Final habitat quality score (weighted)	**AU1 RE 12.1.1 Remnant**	**AU2 RE 12.1.1 Regrowth**	**AU3 RE 12.1.1 Non-remnant**	**AU4 RE12.3.20 Remnant**	**AU5 RE 12.3.20 Regrowth**	**AU6 RE 12.3.20 Non-remnant**	**Average/Final**
Habitat Quality Score (measured /100)	88.00	89.00	69.00	91.50	88.00	86.00	85.25
Habitat Quallity Score (max)	100	100	100	100	100	100	100
Assessment Unit area (ha)	14.20	5.16	22.03	28.22	4.74	12.48	86.83
Assessment Unit Habitat Quality Score /10	8.80	8.90	6.90	9.15	8.80	8.60	*8.53*
Size Weighting						1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***8.60***	***8.60***

Appendix K: Offset HQS tables Koala habitat

TABLE A6.1 TABOOBA AU1 RE 12.8.16 REMNANT START QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 Remnant								
Site Reference	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	5	10.0	142.9	5	135.7	5
Native plant species richness - grasses	7	10	142.9	5	16.0	228.6	5	185.7	5
Native plant species richness - forbs	29	31	106.9	5	34.0	117.2	5	112.1	5
Tree canopy height	20	15	75.0	5	18.0	90.0	5	82.5	5
Tree subcanopy height	8	8	100.0	5	10.0	125.0	5	112.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	5	14.0	100.0	5	91.1	5
Tree canopy cover (EDL)	41	44.3	107.6	5	83.0	202.4	5	155.0	5
Subcanopy cover	17	17.5	102.9	5	1.0	5.9	0	54.4	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	5	42.0	144.8	5	125.5	5
Shrub canopy cover	4	0	0.0	0	0.0	0.0	0	0.0	0
Native grass cover	45	22	48.9	1	27.2	60.4	3	54.7	3
Organic litter	21	3.4	16.2	3	6.2	29.5	3	22.9	3
Number of large trees/ha	33	10	30.3	5	14.0	42.4	5	36.4	5
Coarse woody debris (m/ha)	336	18	5.4	0	170.0	50.6	5	28.0	2
Non-native plant cover	0	46		10	15.0		5	27.5	3
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				10			10		10
Site Condition Score				71.5			73.5		68.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.15**			**2.21**		**2.06**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			97.73			97.73		97.73	
Dispersal habitat			2.27	5		2.27	5	2.27	5
Context									
Foraging/breeding habitat			86.26			87.48		86.87	
Dispersal habitat			13.74	5		15.52	5	14.63	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				7			10		10
Species mobility capacity				10			10		10
Site Context Score				38			39		38.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.04**			**2.09**		**2.06**

	Tabooba AU 1 - RE12.8.16 remnant								
	AU Koala density	Site 472-473			Site 474-475				Average Score
Species Stocking Rate (SSR)	0.25			Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)	0.25			30			30		30
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				65			65		65
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**3.71**			**3.71**		**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.61	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	358.69								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***7.83***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	***7.83***

TABLE A6.2 TABOOBA AU1 RE 12.8.16 REMNANT WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 Remnant								
Site Reference	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	5	10.0	142.9	5	135.7	5
Native plant species richness - grasses	7	10	142.9	5	16.0	228.6	5	185.7	5
Native plant species richness - forbs	29	31	106.9	5	34.0	117.2	5	112.1	5
Tree canopy height	20	15	75.0	5	18.0	90.0	5	82.5	5
Tree subcanopy height	8	8	100.0	5	10.0	125.0	5	112.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	5	14.0	100.0	5	91.1	5
Tree canopy cover (EDL)	41	44.1	107.6	5	83.0	202.4	5	155.0	5
Subcanopy cover	17	17.5	102.9	5	1.0	5.9	1	54.4	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	5	42.0	144.8	5	125.5	5
Shrub canopy cover	4	0	0.0	0	0.0	0.0	0	0.0	0
Native grass cover	45	22	48.9	1	27.2	60.4	3	54.7	3
Organic litter	21	3.4	16.2	3	6.2	29.5	3	22.9	3
Number of large trees (ha)	33	10	30.3	10	14.0	42.4	10	36.4	10
Coarse woody debris (m/ha)	336	18	5.4	0	170.0	50.6	5	28.0	2
Non-native plant cover	0	40		3	15.0		5	27.5	3
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				10			10		10
Site Condition Score				69.5			78.5		73.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.09**			**2.36**		**2.21**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			97.7			97.7		97.7	
Dispersal habitat			2.3	5		2.3	5	2.3	5
Context									
Foraging/breeding habitat			86.3			87.5		86.9	
Dispersal habitat			13.7	5		15.5	5	14.6	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				7					5
Species mobility capacity				10			10		10
Site Context Score				38			38		38
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.04**			**2.04**		**2.04**

	Tabooba AU 1 - RE12.8.16 Remnant								
Species Stocking Rate (SSR)	**AU Koala density 0.25**	Site 472-473		Score	Site 474-475		Score		Average Score
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)	0.25			30			30		30
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				65			65		65
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**3.71**			**3.71**		**3.71**

Final habitat quality score (weighted)	**Tabooba AU1 RE12.8.16 remnant**	**Tabooba AU2 RE12.8.16 Advanced Regrowth**	**Tabooba AU3 RE12.8.16 Young Regrowth**	**Tabooba AU4 RE12.8.14 Remnant**	**Tabooba AU5 RE12.8.14 Advanced Regrowth**	**Greenridge AU4 RE12.3.20 Remnant**	**Greenridge AU5 RE12.3.20 Regrowth**	**Greenridge AU6 RE12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	358.69								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***7.96***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	*7.96*

TABLE A6.3 TABOOBA AU1 RE 12.8.16 REMNANT WITH OFFSET QUALITY FOR KOALA

START SCORE: 9

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 Remnant								
Site Reference	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	5	10.0	142.9	5	135.7	5
Native plant species richness - grasses	7	10	142.9	5	16.0	228.6	5	185.7	5
Native plant species richness - forbs	29	31	106.9	5	34.0	117.2	5	112.1	5
Tree canopy height	20	15	75.0	5	18.0	90.0	5	82.5	5
Tree subcanopy height	8	8	100.0	5	10.0	125.0	5	112.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	5	14.0	100.0	5	91.1	5
Tree canopy cover (EDL)	41	44.1	107.6	5	83.0	202.4	3	155.0	5
Subcanopy cover	17	17.5	102.9	5	1.0	5.9	2	54.4	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	5	42.0	144.8	5	125.5	5
Shrub canopy cover	4	0	0.0	5	0.0	0.0	5	0.0	5
Native grass cover	45	22	48.9	3	27.2	60.4	5	54.7	5
Organic litter	21	3.4	16.2	5	6.2	29.5	5	22.9	5
Number of large trees (ha)	33	10	30.3	10	14.0	42.4	10	36.4	10
Coarse woody debris (m/ha)	336	18	5.4	5	170.0	50.6	5	28.0	5
Non-native plant cover	0	40		5	15.0		5	27.5	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				10			10		10
Site Condition Score				85.5			87.5		87.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.57**			**2.63**		**2.63**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			97.73			97.73		97.73	
Dispersal habitat			2.27	5		2.27	5	2.27	5
Context									
Foraging/breeding habitat			86.26			87.48		86.87	
Dispersal habitat			13.74	5		15.52	5	14.63	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				11			11		10
Species mobility capacity				10			10		10
Site Context Score				42			42		42
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.25**			**2.25**		**2.25**

	Tabooba AU 1 - RE12.8.16 Remnant							
	AU Koala density	Site 472-473			Site 474-475			Average Score
Species Stocking Rate (SSR)	0.25			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.25			30			30	30
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				65			65	65
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	358.69								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***8.59***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	***8.59***

TABLE A6.4 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH START QUALITY FOR KOALA**

START SCORE: **6**

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth															
Site Reference	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	50	50.0	3	100	100.0	5	87.5	5
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.5	67.9	2.5
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	1	14.3	0	46.4	2.5
Native plant species richness - grasses	7	9	128.6	5	8	114.3	5	3	42.9	2.5	5	71.4	2.5	89.3	2.5
Native plant species richness - forbs	29	29	100.0	5	32	110.3	5	15	51.7	2.5	18	62.1	2.5	81.0	2.5
Tree canopy height	20	10	50.0	3	16	80.0	5	8	40.0	3	10	50.0	3	55.0	3
Tree subcanopy height	8	5	62.5	3	8	100.0	5	3	37.5	3	4	50.0	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	3	12	85.7	5	5.5	39.3	3	7.0	50.0	3	57.1	3
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	0	35	85.4	5	64.0	5
Subcanopy cover	17	6	35.3	2	7	41.2	2	3	17.6	2	11.5	67.6	5	40.4	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	5	25.3	87.1	5	3.0	10.3	2	23.3	80.2	5	57.1	5
Shrub canopy cover	4	1.5	37.5	3	4.5	112.5	5	0	0.0	0	19	475.0	3	156.3	5
Native grass cover	45	3.2	7.1	0	43	95.6	5	61	135.6	5	2.8	6.2	0	61.1	3
Organic litter	21	10.8	51.4	5	5	23.8	3	2	9.5	0	0.8	3.8	0	22.1	3
Number of large trees/ha	33	8	24.2	5	12	36.4	5	12	36.4	5	6	18.2	5	28.8	5
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	2	79	23.5	2	39.1	2
Non-native plant cover	0	5		5	20		5	35		10	15		5	23.3	5
Quality and availability of food and foraging habitat: Koala				10			10			10			5		10
Quality and availability of shelter: Koala				5			10			1			5		5
Site Condition Score				66			78			51			45.5		61.00
MAX Site Condition Score				*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**1.98**			**2.34**			**1.53**			**1.37**		**1.83**
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average score**
Size of patch (ha)															
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		>200			>200	10	>200	10
Connectivity															
Foraging/breeding habitat			86.09			86.09			86.09			61.65		79.98	
Dispersal habitat			13.91	5		13.91	5		13.91	5		38.35	4	20.02	5
Context															
Foraging/breeding habitat			95.77			72.74			70.12			67.44		76.52	
Dispersal habitat			4.37	5		27.26	4		29.88	4		32.55	4	23.52	5
Ecological Corridors				0			0			0			0		0
Role of site location to species overall population in the state				1			1			1			1		1
Absence of threats				6			6			5			6		5
Species mobility capacity				10			10			10			10		10
Site Context Score				37			36			25			35		33.25
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.98**			**1.93**			**1.34**			**1.88**		**1.78**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth													
	AU Koala density	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average Score
Species Stocking Rate (SSR)	0.25			Score			Score			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15			15			15	15
Approximate density (per ha)	0.04			10			10			10			10	10
Role/importance of species population on site*				5			5			5			5	5
Total SRR score (out of 70)				40			40			40			40	40
Max SRR Score				*70*			*70*			*70*			*70*	*70*
SRR Score (out of 4)				**2.29**			**2.29**			**2.29**			**2.29**	**2.29**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.68	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.61	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MINES		145.02							
Size Weighting	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***5.90***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	*5.90*

TABLE A6.5 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH WITHOUT OFFSET QUALITY FOR KOALA**

START SCORE: **6**

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth															
Site Reference	Benchmark 12.8.16	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	3	100	100.0	3	50	50.0	3	100	100.0	3	87.5	3
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.5	67.9	2.5
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	1	14.3	0	46.4	2.5
Native plant species richness - grasses	7	9	128.6	2.5	8	114.3	2.5	3	42.9	2.5	5	71.4	2.5	89.3	2.5
Native plant species richness - forbs	29	29	100.0	2.5	32	110.3	2.5	15	51.7	2.5	18	62.1	2.5	81.0	2.5
Tree canopy height	20	10	50.0	3	16	80.0	3	8	40.0	3	10	50.0	3	55.0	3
Tree subcanopy height	8	5	62.5	3	8	100.0	3	3	37.5	3	4	50.0	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	3	12	85.7	3	5.5	39.3	3	7.0	50.0	3	57.1	3
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	0	35	85.4	5	64.0	5
Subcanopy cover	17	6	35.3	2	7	41.2	2	3	17.6	2	11.5	67.6	4	40.4	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	2	25.3	87.1	5	3.0	10.3	2	23.3	80.2	5	57.1	2
Shrub canopy cover	4	1.5	37.5	0	4.5	112.5	0	0	0.0	0	19	475.0	0	156.3	0
Native grass cover	45	3.2	7.1	0	43	95.6	5	61	135.6	5	2.8	6.2	0	61.1	3
Organic litter	21	10.8	51.4	3	1	23.8	3	2	9.5	0	0.8	3.8	0	22.1	3
Number of large trees (ha)	33	8	24.2	5	12	36.4	5	12	36.4	5	6	18.2	5	28.8	5
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	2	79	23.5	2	39.1	2
Non-native plant cover	0	5		3	20		3	35		3	15		3	18.8	3
Quality and availability of food and foraging habitat: Koala				10			10			10			5		10
Quality and availability of shelter: Koala				5			10			1			5		5
Site Condition Score				49			62			44			38.5		49.00
MAX Site Condition Score				*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**1.47**			**1.86**			**1.32**			**1.16**		**1.47**
Site Context			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Size of patch (ha)															
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		>200			>200	10	>200	10
Connectivity															
Foraging/breeding habitat			86.1			86.1			86.1			61.6		80.0	
Dispersal habitat			13.9	5		13.9	5		13.9	5		38.4	4	20.0	5
Context															
Foraging/breeding habitat			95.8			72.7			70.1			67.4		76.5	
Dispersal habitat			4.4	5		27.3	4		29.9	4		32.6	4	23.5	5
Ecological Corridors				0			0			0			0		0
Role of site location to species overall population in the state				1			1			1			1		1
Absence of threats				5			5			5			5		5
Species mobility capacity				10			10			10			10		10
Site Context Score				36			35			25			34		32.5
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.93**			**1.88**			**1.34**			**1.82**		**1.74**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
	AU Koala density	Site 470-471			Site 683-684			Site 685-686			Site 734-735				
Species Stocking Rate (SSR)	0.25			Score			Score			Score			Score		Average Score
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15			15			15		15
Approximate density (per ha)	0.04			10			10			10			10		10
Role/importance of species population on site*				5			5			5			5		5
Total SRR score (out of 70)				40			40			40			40		40
Max SRR Score				70			70			70			70		70
SRR Score (out of 4)				**2.29**			**2.29**			**2.29**			**2.29**		**2.29**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES		145.02							
Size Weighting	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***5.50***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	*5.50*

TABLE A6.6 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH WITH OFFSET QUALITY FOR KOALA**

START SCORE: **8**

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth															
Site Reference	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average %	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	benchmark	
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	50	50.0	3	100	100.0		87.5	
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.	67.5	2.
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	4	14.3		46.4	2.
Native plant species richness - grasses	7	9	128.6	5	8	114.3	5	3	42.9	2.5	5	71.4	2.	89.3	2.
Native plant species richness - forbs	29	29	100.0	5	32	110.3	5	15	51.7	2.5	18	62.1	2.	81.0	2.
Tree canopy height	20	10	50.0	5	16	80.0	5	8	40.0	1	10	50.0		55.0	
Tree subcanopy height	8	5	62.5	5	8	100.0	5	3	37.5	2	4	50.0		62.5	
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	5	12	85.1	5.0	5.5	39.1	3	7.0	50.0	5	57.1	
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	1	35	85.4		64.0	
Subcanopy cover	17	6	35.3	5	7	41.2	5	3	17.6	1	11.5	67.6		40.4	
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	5	25.3	87.1	5	3.8	10.3	1	23.5	80.3		57.1	
Shrub canopy cover	4	1.5	37.5	5	4.5	112.5	5	0	0.0	1	19	475.0		156.3	
Native grass cover	45	3.2	7.1	1	43	95.6	5	61	135.6	5	2.8	6.2		61.1	
Organic litter	21	10.8	51.4	5	5	23.8	1	2	9.5	1	0.8	3.8		22.1	
Number of large trees (ha)	33	8	24.2	10	12	36.4	10	12	36.4	10	6	18.2	10	28.8	10
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	1	79	23.5		39.1	
Non-native plant cover	0	5		5	20		1	35		1	15			18.8	1
Quality and availability of food and foraging habitat: Koala				10			10			10			10		10
Quality and availability of shelter: Koala				5			10			10			10		10
Site Condition Score				78			85			80			75.5		85.00
MAX Site Condition Score				*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.34**			**2.55**			**2.40**			**2.27**		**2.55**
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average score**
Size of patch (ha)															
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		>200	10		>200	10	>200	10
Connectivity															
Foraging/breeding habitat			86.09			86.09			86.09			61.65		79.98	
Dispersal habitat			13.91	5		13.91	5		13.91	5		38.35	4	20.02	5
Context															
Foraging/breeding habitat			95.77			72.74			70.12			67.44		76.52	
Dispersal habitat			4.37	5		27.26	4		29.88	4		32.55	4	23.52	5
Ecological Corridors				0			0			0					
Role of site location to species overall population in the state				1			1			1					
Absence of threats				11			11			11			11		11
Species mobility capacity				10			10			10			10		10
Site Context Score				42			41			41			40		41
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.25**			**2.20**			**2.20**			**2.14**		**2.20**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth													
	AU Koala density	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average Score
Species Stocking Rate (SSR)	0.25			Score			Score			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10			10	
Species usage of the site (habitat type & evidenced usage)				15			15			15			15	
Approximate density (per ha)	0.04			30			30			30			30	3
Role/importance of species population on site*				10			10			10			10	1
Total SRR score (out of 70)				65			65			65			65	65
Max SRR Score				*70*			*70*			*70*			*70*	*70*
SRR Score (out of 4)				**3.71**			**3.71**			**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES		145.02							
Size Weighting	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***8.46***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	***8.46***

TABLE A6.7 TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH START QUALITY FOR KOALA

START SCORE: 4

Assessment Unit - Regional Ecosystem	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference	Benchmark 12.8.16	Site 687-688			Site 756-757			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	66.7	66.7	3	100	100.0	5	83.4	4
Native plant species richness - trees	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	7	7	100.0	5	8	114.3	5	107.1	5
Native plant species richness - forbs	29	17	58.6	2.5	27	93.1	5	75.9	3.75
Tree canopy height	20	15	75.0	5	8	40.0	3	57.5	4
Tree subcanopy height	8	5	62.5	3	3	37.5	3	50.0	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	10	68.8	3	5.5	39.3	3	54.0	3
Tree canopy cover (EDL)	41	28	68.3	5	28	68.3	5	68.3	5
Subcanopy cover	17	7	41.2	2	3.5	20.6	2	30.9	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	17.5	54.7	5	15.75	44.4	3	49.6	3.5
Shrub canopy cover	4	0	0.0	0	0	0.0	0	0.0	0
Native grass cover	45	63	140.0	5	2	4.4	0	72.2	2.5
Organic litter	21	1	4.8	0	3.8	18.1	1	11.4	1.5
Number of large trees/ha	33	2	6.1	5	2	6.1	5	6.1	5
Coarse woody debris (m/ha)	336	277	82.4	5	61	18.2	2	50.3	3.5
Non-native plant cover	0	30		10	10		5		7.5
Quality and availability of food and foraging habitat: Koala				5			5		5
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				58.5			50		54.25
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**1.76**			**1.50**		**1.63**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			51.60			70.95		61.3	
Dispersal habitat			48.40	4		29.05	2	38.7	4
Context									
Foraging/breeding habitat			79.74			64.85		72.3	
Dispersal habitat			20.26	5		35.11	3	27.7	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				4			5		5
Species mobility capacity				10			10		10
Site Context Score				34			34		34
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.82**			**1.82**		**1.82**

	AU3 - RE 12.8.16 Young Regrowth							
	AU Koala density	Site 687-688			Site 756-757			Average Score
Species Stocking Rate (SSR)	0.5			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				5			5	5
Approximate density (per ha)	0			0			0	0
Role/importance of species population on site*				0			0	0
Total SRR score (out of 70)				15			15	15
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**0.86**			**0.86**	**0.86**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.61	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES			48.10						
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***4.31***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	***4.31***

TABLE A6.8 TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 3

Assessment Unit - Regional Ecosystem	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference	Benchmark	Site 687-688			Site 756-757			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	66.7	66.7	0	100	100.0		83.4	0
Native plant species richness - trees	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	7	7	100.0	2.5	8	114.3	2.5	107.1	2.5
Native plant species richness - forbs	29	17	58.6	2.5	27	93.1	2.5	75.9	2.5
Tree canopy height	20	15	75.0	0	8	40.0		57.5	0
Tree subcanopy height	8	5	62.5	0	3	37.5		50.0	0
Tree canopy height (average of emergent, canopy, sub-canopy)	14	10	71.4	0	5.8	39.3		55.4	0
Tree canopy cover (EDL)	41	29	68.3	0	28	68.3		68.3	0
Subcanopy cover	17	7	41.2	0	3.5	20.6		30.9	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	17.5	60.3	0	15.75	54.3		57.3	0
Shrub canopy cover	4	0	0.0	0	0	0.0		0.0	0
Native grass cover	45	63	140.0	0	1	4.4		72.2	0
Organic litter	21	1	4.8	0	3.8	18.1		11.4	0
Number of large trees (ha)	33	2	6.1	0	4	12.1		9.1	0
Coarse woody debris (m/ha)	336	277	82.4	0	61	18.2		50.3	0
Non-native plant cover	0	30	30	0	10	10			0
Quality and availability of food and foraging habitat: Koala				5					5
Quality and availability of shelter: Koala				5					5
Site Condition Score				20			20		20
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**0.60**			**0.60**		**0.60**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			51.60			70.95		61.3	
Dispersal habitat			48.40	4		29.05	4	38.7	4
Context									
Foraging/breeding habitat			79.74			64.89		72.3	
Dispersal habitat			20.26	5		35.11	4	27.7	4
Ecological Corridors				0					0
Role of site location to species overall population in the state				1					1
Absence of threats				4					5
Species mobility capacity				10			10		10
Site Context Score				34			33		33.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.82**			**1.77**		**1.79**

	Tabooba AU3 - RE 12.8.16 Young Regrowth							
	AU Koala density	Site 687-688			Site 756-757			Average Score
Species Stocking Rate (SSR)	0.5			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				5			5	5
Approximate density (per ha)	0			0			0	0
Role/importance of species population on site*				0			0	0
Total SRR score (out of 70)				15			15	15
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**0.86**			**0.86**	**0.86**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	6.02	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES			48.10						
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***3.25***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	*3.25*

TABLE A6.9 TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH WITH OFFSET QUALITY FOR KOALA

START SCORE: 7

Assessment Unit - Regional Ecosystem	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference	Benchmark	Site 687-688			Site 756-757			Average %	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	benchmark	
Site Condition									
Recruitment of woody perennial species in EDL	100	66.7	66.7	3	100	100.0	5	83.4	5
Native plant species richness - trees	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	7	7	100.0	5	8	114.3	5	107.1	5
Native plant species richness - forbs	29	17	58.6	2.5	27	93.1	5	75.9	2.5
Tree canopy height	20	15	75.0	5	8	40.0	3	57.5	3
Tree subcanopy height	8	5	62.5	3	3	37.5	3	50.0	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	10	71.4	5	5.5	39.3	5.0	55.4	5
Tree canopy cover (EDL)	41	29	68.3	5	28	68.3	5	68.3	5
Subcanopy cover	17	7	41.2	2	3.5	20.6	2	30.9	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	17.5	60.3	5	15.75	54.3	5.0	57.3	5
Shrub canopy cover	4	0	0.0	5	0	0.0	5	0.0	5
Native grass cover	45	62	140.0	5	4	4.4	5	72.2	5
Organic litter	21	4	4.8	3	3.8	18.1	5	11.4	5
Number of large trees (ha)	33	3	6.1	5	4	12.1	5	9.1	5
Coarse woody debris (m/ha)	336	272	82.4	5	61	18.2	2	50.3	5
Non-native plant cover	0	30	30	5	10	10	10	20.0	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				10			10		10
Site Condition Score				73.5			75		77.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.21**			**2.25**		**2.33**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			51.60			70.95		61.3	
Dispersal habitat			48.40	4		29.05	4	38.7	4
Context									
Foraging/breeding habitat			79.74			64.89		72.3	
Dispersal habitat			20.26	5		35.11	4	27.7	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				11			11		10
Species mobility capacity				10			10		10
Site Context Score				41			40		40.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.20**			**2.14**		**2.17**

	Tabooba AU3 - RE 12.8.16 Young Regrowth							
	AU Koala density	Site 687-688			Site 756-757			Average Score
Species Stocking Rate (SSR)	0.5			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0			10			10	10
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				45			45	45
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**2.57**			**2.57**	**2.57**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES			48.10						
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***7.07***	***0.00***	***0.00***	***0.0***	***0.0***	***0.0***	*7.07*

TABLE A6.10 TABOOBA AU4 RE 12.8.14 REMNANT START QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark 12.8.14	Site 680-681			Site 747-748			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.7	66.7	3	83.4	5
Native plant species richness - trees	6	8	133.3	5	9	150.0	5	141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.7	2.5	91.7	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0	5	118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0	5	171.4	5
Tree canopy height	22	18	81.8	5	15	68.2	3	75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5	1	68.2	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6	3	72.7	5
Tree canopy cover (EDL)	16	35	218.9	5	27	168.8	5	193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0	0	46.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1	5	122.6	5
Shrub canopy cover	4	3	75.0	5	1	25.0	1	50.0	5
Native grass cover	58	47	81.0	3	12	20.7	1	50.9	3
Organic litter	30	5	16.7	1	13	43.3	3	30.0	3
Number of large trees/ha	45	22	48.9	5	6	13.3	5	31.1	5
Coarse woody debris (m/ha)	336	128	38.1	2	5	1.5	0	19.8	2
Non-native plant cover	0	10		5	35		10	22.5	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				73			65.5		73
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.19**					**2.19**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			75.23			100.0		87.6	
Dispersal habitat			24.77	5		0.0	5	12.4	5
Context									
Foraging/breeding habitat			56.63			74.26		65.4	
Dispersal habitat			43.47	4		25.74	4	34.6	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				8			1		10
Species mobility capacity				10			10		10
Site Context Score				38			37		37.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.04**			**1.98**		**2.01**

	Tabooba AU4 - RE 12.8.14 Remnant							
Species Stocking Rate (SSR)	**AU Koala density 0.23**	Site 680-681			Site 747-748			Average Score
				Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.23			30			30	30
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70				65			65	65
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Fina
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.61	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES				50.62					
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***7.91***	***0.00***	***0.0***	***0.0***	***0.0***	***7.91***

TABLE A6.11 TABOOBA AU4 RE 12.8.14 REMNANT WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.1	66.1		83.0	5
Native plant species richness - trees	6	8	133.3	5	9	150.0		141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.1	2	91.3	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0		118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0		171.4	5
Tree canopy height	22	18	81.8	5	15	68.2		75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5		68.2	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6		72.7	5
Tree canopy cover (EDL)	16	35	218.8	1	27	168.8		193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0		46.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1		122.6	5
Shrub canopy cover	4	3	75.0	5	1	25.0		50.0	5
Native grass cover	58	47	81.0	3	12	20.7		50.9	3
Organic litter	30	5	16.7	1	13	43.3		30.0	3
Number of large trees (ha)	45	22	48.9	5	6	13.3		31.1	5
Coarse woody debris (m/ha)	336	128	38.1	2	6	1.9		19.8	2
Non-native plant cover	0	16		5	35		1	22.5	5
Quality and availability of food and foraging habitat: Koala				10			1		10
Quality and availability of shelter: Koala				5					5
Site Condition Score				73			65.5		73
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.19**					**2.19**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	1	>200	10
Connectivity									
Foraging/breeding habitat			75.23			100.0		87.6	
Dispersal habitat			24.77	5		0.0		12.4	5
Context									
Foraging/breeding habitat			56.63			74.26		65.4	
Dispersal habitat			43.47	4		25.74		34.6	4
Ecological Corridors				0					0
Role of site location to species overall population in the state				1					1
Absence of threats				5					5
Species mobility capacity				10			1		10
Site Context Score				37			37		37
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.98**			**1.98**		**1.98**

	Tabooba AU4 - RE 12.8.14 Remnant							
	AU Koala density	Site 680-681			Site 747-748			Average Score
Species Stocking Rate (SSR)	0.23			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.23			30			30	30
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				65			65	65
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES				50.62					
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***7.89***	***0.00***	***0.0***	***0.0***	***0.0***	*7.89*

TABLE A6.12 TABOOBA AU4 RE 12.8.14 REMNANT WITH OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark 12.8.14	Site 680-681			Site 747-748			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.7	66.7	5	83.4	5
Native plant species richness - trees	6	8	133.3	5	9	150.0	5	141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.7	5	91.2	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0	5	118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0	5	171.4	5
Tree canopy height	22	18	81.8	5	15	68.2	5	75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5	5	68.2	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6	5	72.7	5
Tree canopy cover (EDL)	16	35	218.8	5	27	168.8	5	193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0	5	46.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1	5	122.6	5
Shrub canopy cover	4	5	75.0	5	1	25.0	5	50.0	5
Native grass cover	58	47	81.0	5	12	20.7	5	50.9	5
Organic litter	30	5	16.7	5	13	43.3	5	30.0	5
Number of large trees (ha)	45	22	48.9	10	6	13.3	5	31.1	5
Coarse woody debris (m/ha)	336	128	38.1	5	5	1.5	5	19.8	5
Non-native plant cover	0	10		5	35		5	22.5	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				5			10		5
Site Condition Score				83			83		78
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.49**					**2.34**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			75.23			100.0		87.6	
Dispersal habitat			24.77	5		0.0	5	12.4	5
Context									
Foraging/breeding habitat			56.63			74.26		65.4	
Dispersal habitat			43.47	4		25.74	4	34.6	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				11			11		11
Species mobility capacity				10			10		10
Site Context Score				41			41		41
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.20**			**2.20**		**2.20**

	Tabooba AU4 - RE 12.8.14 Remnant							
	AU Koala density	Site 680-681			Site 747-748			Average Score
Species Stocking Rate (SSR)	0.23			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.23			30			30	30
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				65			65	65
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES				50.62					
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***8.25***	***0.00***	***0.0***	***0.0***	***0.0***	***8.25***

TABLE A6.13 TABOOBA AU5 RE 12.8.14 ADVANCED REGROWTH START QUALITY FOR KOALA

START SCORE: 7

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark 12.8.14	Site 736-737			Site 751-752			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	5	7	116.7	5	133.3	5
Native plant species richness - grasses	8	9	112.5	5	9	112.5	5	112.5	5
Native plant species richness - forbs	21	27	128.6	5	48	228.6	5	178.6	5
Tree canopy height	22	12	54.5	3	10	45.5	3	50.0	3
Tree subcanopy height	11	6	54.5	3	5	45.5	3	50.0	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	3	7.5	45.5	3	50.0	3
Tree canopy cover (EDL)	16	44	275.0	3	40.5	253.1	3	264.1	3
Subcanopy cover	15	5	33.3	2	10.5	70.0	4	51.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	5
Shrub canopy cover	4	2	50.0	5	1	25.0	1	37.5	3
Native grass cover	58	29	50.0	3	16	27.6	1	38.8	1
Organic litter	30	1	3.3	0	6	20.0	3	11.7	3
Number of large trees/ha	45	10	22.2	5	4	8.9	5	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	1	47.9	2
Non-native plant cover	0	20		5	20		5	20.0	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				71			67		67
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3									**2.01**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			100.0			100.0		100.0	
Dispersal habitat			0.0	5		0.0	5	0.0	5
Context									
Foraging/breeding habitat			81.35			74.0		77.7	
Dispersal habitat			18.65	5		26.0	4	22.3	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				6			6		5
Species mobility capacity				10			10		10
Site Context Score				37			36		36.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.98**			**1.93**		**1.96**

	Tabooba AU5 - 12.8.14 Advanced Regrowth							
Species Stocking Rate (SSR)	**AU Koala density 0.23**	Site 736-737			Site 751-752			Average Score
				Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.07			10			10	10
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				45			45	45
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**2.57**			**2.57**	**2.57**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Fina
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.63	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES					19.80				
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***6.54***	***0.0***	***0.0***	***0.0***	*6.54*

TABLE A6.14 TABOOBA AU5 RE 12.8.14 ADVANCED REGROWTH WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 6

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark 12.8.14	Site 736-737			Site 751-752			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	2.5	7	116.7	2.5	133.3	2.5
Native plant species richness - grasses	8	9	112.5	2.5	9	112.5	2.5	112.5	2.5
Native plant species richness - forbs	21	27	128.6	2.5	48	228.6	2.5	178.6	2.5
Tree canopy height	22	12	54.5	3	10	45.5	3	50.0	3
Tree subcanopy height	11	6	54.5	3	5	45.5	3	50.0	0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	3	7.5	45.5	3	50.0	3
Tree canopy cover (EDL)	16	44	275.0	5	40.5	253.1	5	264.1	5
Subcanopy cover	15	5	33.3	2	10.5	70.0	2	51.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	2
Shrub canopy cover	4	2	50.0	0	1	25.0	0	37.5	0
Native grass cover	58	29	50.0	3	16	27.6	1	38.8	1
Organic litter	30	1	3.3	0	6	20.0	1	11.7	3
Number of large trees (ha)	45	10	22.2	5	4	8.9	1	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	2	47.9	2
Non-native plant cover	0	20		3	20		3	20.0	3
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				56.5			54.5		51.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3									**1.55**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			100.0			100.0		100.0	
Dispersal habitat			0.0	5		0.0	5	0.0	5
Context									
Foraging/breeding habitat			81.4			74.0		77.7	
Dispersal habitat			18.7	5		26.0	4	22.3	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				5			5		5
Species mobility capacity				10			10		10
Site Context Score				36			35		35.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.93**			**1.88**		**1.90**

	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Species Stocking Rate (SSR)	AU Koala density 0.23	Site 736-737			Site 751-752				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)	0.07			10			10		10
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				45			45		45
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**2.57**			**2.57**		**2.57**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES					19.80				
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***6.02***	***0.0***	***0.0***	***0.0***	*6.02*

TABLE A6.15 TABOOBA AU5 RE 12.8.14 ADVANCED REGROWTH WITH OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark 12.8.14	Site 736-737			Site 751-752			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	5	7	116.7	5	133.3	5
Native plant species richness - grasses	8	9	112.5	5	9	112.5	5	112.5	5
Native plant species richness - forbs	21	27	128.6	5	48	228.6	5	178.6	5
Tree canopy height	22	12	54.5	5	10	45.5	5	50.0	5
Tree subcanopy height	11	6	54.5	5	5	45.5	5	50.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	5	7.5	45.5	5	50.0	5
Tree canopy cover (EDL)	16	44	275.0	3	40.5	253.1	3	264.1	3
Subcanopy cover	15	5	33.3	5	10.5	70.0	5	51.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	5
Shrub canopy cover	4	2	50.0	5	1	25.0	5	37.5	5
Native grass cover	58	29	50.0	3	16	27.6	3	38.8	3
Organic litter	30	1	3.3	5	6	20.0	5	11.7	5
Number of large trees (ha)	45	10	22.2	10	4	8.9	5	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	5	47.9	5
Non-native plant cover	0	20		5	20		5	20.0	5
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				83			78		78
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3									**2.34**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			100.0			100.0		100.0	
Dispersal habitat			0.0	5		0.0	5	0.0	5
Context									
Foraging/breeding habitat			81.35			74.0		77.7	
Dispersal habitat			18.65	5		26.0	4	22.3	5
Ecological Corridors				0			0		0
Role of site location to species overall population in the state				1			1		1
Absence of threats				11			11		11
Species mobility capacity				10			10		10
Site Context Score				42			41		41.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.25**			**2.20**		**2.22**

	Tabooba AU5 - 12.8.14 Advanced Regrowth							
Species Stocking Rate (SSR)	RE Koala density 0.23	Site 736-737		Score	Site 751-752		Score	Average Score
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15	15
Approximate density (per ha)	0.07			30			30	30
Role/importance of species population on site*				10			10	10
Total SRR score (out of 70)				65			65	65
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	**Tabooba AU1 RE12.8.16 remnant**	**Tabooba AU2 RE12.8.16 Advanced Regrowth**	**Tabooba AU3 RE12.8.16 Young Regrowth**	**Tabooba AU4 RE12.8.14 Remnant**	**Tabooba AU5 RE12.8.14 Advanced Regrowth**	**Greenridge AU4 RE12.3.20 Remnant**	**Greenridge AU5 RE12.3.20 Regrowth**	**Greenridge AU6 RE12.3.20 Non-**	**Average/ Final**
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES					19.80				
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***8.28***	***0.0***	***0.0***	***0.0***	*8.28*

TABLE A6.16 GREENRIDGE AU4 RE 12.3.20 REMNANT START QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Greenridge AU4 12.3.20 Remnant											
Site Reference	Benchmark 12.3.20	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	3	100	100.0	5	100	100	5	83.3	5
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	5	1	50.0	2.5	4	200	5	133.3	5
Native plant species richness - forbs	8	4	50.0	2.5	6	75.0	2.5	5	62.5	2.5	62.5	2.5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	3	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	0	8	40.0	2	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	0	7	46.7	3	11	73.3	5	41.1	3
Native grass cover	20	16.2	81.0	3	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	5	38	126.7	5	30	100	5	127.8	5
Number of large trees/ha	165	124	75.2	10	130	78.8	10	58	35.2	5	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	2	315.0	35.4	2	165	18.5	2	27.7	2
Non-native plant cover	0	1		10	0		10	5		5	2.0	0
Quality and availability of food and foraging habitat: Koala				10			10			5		10
Quality and availability of shelter: Koala				5			5			10		10
Site Condition Score				70.5			75			74.5		75.0
MAX Site Condition Score				*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.12**			**2.25**			**2.24**		**2.25**
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)												
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		7.75	2	>200	10
Connectivity												
Foraging/breeding habitat			100.0			100.0			4.31		68.1	
Dispersal habitat			0.0	5		0.0	5		9.46	0	3.2	4
Context												
Foraging/breeding habitat			60.85			62.98			49.50		57.8	
Dispersal habitat			28.80	4		24.19	4		12.62	4	21.9	4
Ecological Corridors				6			6			6		6
Role of site location to species overall population in the state				4			4			4		4
Absence of threats				8			8			7		10
Species mobility capacity				10			10			7		10
Site Context Score				47			47			30		41
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.52**			**2.52**			**1.61**		**2.21**

	Greenridge AU4 12.3.20 Remnant										
	AU Koala density 0.4	Site 931-932			Site 964-965			Site 966-967			Average Score
Species Stocking Rate (SSR)				Score			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15			15	15
Approximate density (per ha)		0.4		30	0.4		30	0.4		30	30
Role/importance of species population on site*				10			10			10	10
Total SRR score (out of 70)				65			65			65	65
Max SRR Score				70			70			70	70
SRR Score (out of 4)				**3.71**			**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.62	2.15	2.01	2.24	1.98	0.5	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.6	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.7	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES						28.70			
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***7.6***	***0.0***	***0.0***	***7.56***

TABLE A6.17 GREENRIDGE AU4 RE 12.3.20 REMNANT WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Greenridge AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark 12.3.20	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	3	100	100.0	5	100	100	5	83.3	3
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	2.5	1	50.0	2.5	4	200	2.5	133.3	2.5
Native plant species richness - forbs	8	4	50.0	0	6	75.0	2.5	5	62.5	2.5	62.5	2.5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	0	7	46.7	3	11	73.3	5	41.1	3
Native grass cover	20	16.2	81.0	3	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	3	38	126.7	3	30	100	5	127.8	3
Number of large trees (ha)	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	2	315.0	35.4	2	165	18.5	2	27.7	2
Non-native plant cover	0	1		5	0		5	5		5		5
Quality and availability of food and foraging habitat: Koala				10			10			5		10
Quality and availability of shelter: Koala				5			5			10		10
Site Condition Score				58.5			66			73		73.5
MAX Site Condition Score				*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**1.76**			**1.98**			**2.19**		**2.21**
Site Context			Value	Score		Value	Score		Value	Score	Average	Average Score
Size of patch (ha)												
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		7.8	2	>200	10
Connectivity												
Foraging/breeding habitat			100.0			100.0			4.3		68.1	
Dispersal habitat			0.0	5		0.0	5		9.5	0	3.2	4
Context												
Foraging/breeding habitat			60.9			63.0			49.5		57.8	
Dispersal habitat			28.8	4		24.2	4		12.6	4	21.9	4
Ecological Corridors				6			6			6		6
Role of site location to species overall population in the state				4			4			4		4
Absence of threats				7			7			3		5
Species mobility capacity				10			10			3		10
Site Context Score				46			46			30		41
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.46**			**2.46**			**1.61**		**2.18**

	Greenridge AU4 - RE 12.3.20 Remnant										
Species Stocking Rate (SSR)	AU Koala density 0.4	Site 931-932			Site 964-965			Site 966-967			Average Score
				Score			Score			Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15			15	15
Approximate density (per ha)		0.4		30	0.4		30	0.4		30	30
Role/importance of species population on site*				10			10			10	10
Total SRR score (out of 70)				65			65			65	65
Max SRR Score				*70*			*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.55	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES						28.70			
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***7.5***	***0.0***	***0.0***	*7.51*

TABLE A6.18 GREENRIDGE AU4 RE 12.3.20 REMNANT WITH OFFSET QUALITY FOR KOALA

START SCORE: 8

Assessment Unit - Regional Ecosystem	Greenridge AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark 12.3.20	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	5	100	100.0	5	100	100	5	83.3	5
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	5	1	50.0	5	4	200	5	133.3	5
Native plant species richness - forbs	8	4	50.0	2.5	6	75.0	2.5	5	62.5	5	62.5	5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	3	7	46.7	5	11	73.3	5	41.1	5
Native grass cover	20	16.2	81.0	5	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	5	38	126.7	5	30	100	5	127.8	5
Number of large trees (ha)	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	5	315.0	35.4	5	165	18.5	5	27.7	5
Non-native plant cover	0	1		10	0		10	5		10	2.0	10
Quality and availability of food and foraging habitat: Koala				10			10			5		10.0
Quality and availability of shelter: Koala				5			5			10		10.0
Site Condition Score				80.5			82.5			90		92.5
MAX Site Condition Score				*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.42**			**2.48**			**2.70**		**2.78**
Site Context			Value	Score		Value	Score		Value	Score	Average	Average Score
Size of patch (ha)												
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10		7.75	2	>200	10
Connectivity												
Foraging/breeding habitat			100.0			100.0			4.31		68.1	
Dispersal habitat			0.0	5		0.0	5		9.46	0	3.2	4
Context												
Foraging/breeding habitat			60.85			62.98			49.50		57.8	
Dispersal habitat			28.80	4		24.19	4		12.62	4	21.9	4
Ecological Corridors				6			6			6		6
Role of site location to species overall population in the state				4			4			4		4
Absence of threats				10			10			10		10
Species mobility capacity				10			10			7		10
Site Context Score				49			49			33		44
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.63**			**2.63**			**1.77**		**2.34**

	Greenridge AU4 - RE 12.3.20 Remnant										
	AU Koala density	Site 931-932			Site 964-965			Site 966-967			Average Score
Species Stocking Rate (SSR)	0.4	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10			10	10
Species usage of the site (habitat type & evidenced usage)				15			15			15	15
Approximate density (per ha)		0.4		30	0.4		30	0.4		30	30
Role/importance of species population on site*				10			10			10	10
Total SRR score (out of 70)				65			65			65	65
Max SRR Score				*70*			*70*			*70*	*70*
SRR Score (out of 4				**3.71**			**3.71**			**3.71**	**3.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-	Average/ Final
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES						28.70			
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***8.2***	***0.0***	***0.0***	*8.18*

TABLE A6.19 GREENRIDGE AU5 RE 12.3.20 REGROWTH START QUALITY FOR KOALA

START SCORE: 7

Assessment Unit - Regional Ecosystem	Greenridge AU5 12.3.20 Regrowth								
Site Reference	Benchmark 12.3.20	Site 974-975			Site 923-924			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	3	6	37.5	1	53.1	3
Tree subcanopy height	8	7	87.5	5	3	37.5	1	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	1	56.3	3
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	1	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	3	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	1	25.0	3
Native grass cover	20	9.2	46.0	1	37	185	5	115.5	5
Organic litter	30	85.2	284.0	3	14	46.67	1	165.3	5
Number of large trees/ha	165	16	9.7	5	10	6.1	1	7.9	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	9		5	10		5	7.5	5
Quality and availability of food and foraging habitat: Koala				5			5		5
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				62			61.5		66.0
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**1.86**			**1.85**		**1.98**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			79.86			0.00		39.9	
Dispersal habitat			20.14	5		51.43	2	35.8	2
Context									
Foraging/breeding habitat			56.62			40.89		48.8	
Dispersal habitat			33.9	4		41.07	4	37.5	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				4			4		4
Absence of threats				7			5		5
Species mobility capacity				10			10		10
Site Context Score				46			43		45
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.46**			**2.30**		**2.38**

	Greenridge AU5 12.3.20 Regrowth								
Species Stocking Rate (SSR)	**AU Koala density 0.4**	Site 974-975			Site 923-924				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)		0.14		10	0.14		10		10
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				45			45		45
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**2.57**			**2.57**		**2.57**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.63	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.83*
Total offset area (ha) for this MNES							4.77		
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***6.9***	***0.0***	***6.94***

TABLE A6.20 GREENRIDGE AU5 RE 12.3.20 REGROWTH WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 7

Assessment Unit - Regional Ecosystem	Greenridge AU5 12.3.20 Regrowth								
Site Reference	Benchmark 12.3.20	Site 974-975			Site 923-924			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	3	53.1	5
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	2	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	3	25.0	3
Native grass cover	20	9.2	46.0	1	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	3	14	46.7	3	165.3	5
Number of large trees (ha)	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	5		3	10		3	7.5	3
Quality and availability of food and foraging habitat: Koala				5			5		5
Quality and availability of shelter: Koala				5			5		5
Site Condition Score				60			59.5		66.0
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**1.80**			**1.79**		**1.98**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			79.86			0.00		39.9	
Dispersal habitat			20.14	5		51.43	2	35.8	2
Context									
Foraging/breeding habitat			56.62			40.89		48.8	
Dispersal habitat			33.9	4		41.07	4	37.5	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				4			4		4
Absence of threats				6			6		5
Species mobility capacity				10			10		10
Site Context Score				45			42		44
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.41**			**2.25**		**2.33**

	Greenridge AU5 12.3.20 Regrowth								
Species Stocking Rate (SSR)	**AU Koala density 0.4**	Site 974-975			Site 923-924				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)		0.14		10	0.14		10		10
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				45			45		45
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**2.57**			**2.57**		**2.57**

Final habitat quality score (weighted)	**Tabooba AU1 RE12.8.16 remnant**	**Tabooba AU2 RE12.8.16 Advanced Regrowth**	**Tabooba AU3 RE12.8.16 Young Regrowth**	**Tabooba AU4 RE12.8.14 Remnant**	**Tabooba AU5 RE12.8.14 Advanced Regrowth**	**Greenridge AU4 RE12.3.20 Remnant**	**Greenridge AU5 RE12.3.20 Regrowth**	**Greenridge AU6 RE12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES							4.77		
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.9***	***0.0***	*6.88*

TABLE A6.21 GREENRIDGE AU5 RE 12.3.20 REGROWTH WITH OFFSET QUALITY FOR KOALA

START SCORE: 9

Assessment Unit - Regional Ecosystem	Greenridge AU5 12.3.20 Regrowth								
Site Reference	Benchmark 12.3.20	Site 974-975			Site 923-924			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	5	53.1	5
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	5	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	5	2	13.3	5	25.0	5
Native grass cover	20	92	46.0	5	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	5	14	46.7	5	165.3	5
Number of large trees (ha)	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	5		10	10		10	7.5	10
Quality and availability of food and foraging habitat: Koala				5			5		5
Quality and availability of shelter: Koala				5			10		5
Site Condition Score				80			83		80.0
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.40**			**2.49**		**2.40**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		>200	10	>200	10
Connectivity									
Foraging/breeding habitat			79.86			0.00		39.9	
Dispersal habitat			20.14	5		51.43	2	35.8	2
Context									
Foraging/breeding habitat			56.62			40.89		48.8	
Dispersal habitat			33.9	4		41.07	4	37.5	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				4			4		4
Absence of threats				12			12		10
Species mobility capacity				10			10		10
Site Context Score				51			48		50
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.73**			**2.57**		**2.65**

	Greenridge AU5 12.3.20 Regrowth								
Species Stocking Rate (SSR)	**AU Koala density 0.4**	Site 974-975			Site 923-924				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				15			15		15
Approximate density (per ha)		0.14		30	0.14		30		30
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				65			65		65
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4)				**3.71**			**3.71**		**3.71**

Final habitat quality score (weighted)	**Tabooba AU1 RE12.8.16 remnant**	**Tabooba AU2 RE12.8.16 Advanced Regrowth**	**Tabooba AU3 RE12.8.16 Young Regrowth**	**Tabooba AU4 RE12.8.14 Remnant**	**Tabooba AU5 RE12.8.14 Advanced Regrowth**	**Greenridge AU4 RE12.3.20 Remnant**	**Greenridge AU5 RE12.3.20 Regrowth**	**Greenridge AU6 RE12.3.20 Non-**	**Average/ Final**
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES							4.77		
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***8.8***	***0.0***	***8.77***

TABLE A6.22 GREENRIDGE AU6 RE 12.3.20 NON-REMNANT START QUALITY FOR KOALA

START SCORE: 4

Assessment Unit - Regional Ecosystem	Greenridge AU6 12.3.20 Non-remnant								
Site Reference	Benchmark 12.3.20	Site 972-973			Site 960-961			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	1	50	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50	1	25.0	3
Tree subcanopy height	8	0	0.0	0	4	25	1	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	1	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	1	8.9	0
Subcanopy cover	20	0	0.0	0	0	0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	1	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.67	5	68.0	5
Number of large trees/ha	165	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95		0	95.0	0
Quality and availability of food and foraging habitat: Koala				0			0		0
Quality and availability of shelter: Koala				1			0		1
Site Condition Score				8.5			30		17.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**0.26**			**0.90**		**0.53**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		7.75	1	>200	10
Connectivity									
Foraging/breeding habitat			0			4.31		2.2	
Dispersal habitat			61.79	2		9.46	0	35.6	2
Context									
Foraging/breeding habitat			24.41			47.53		36.0	
Dispersal habitat			43.00	4		25.41	4	34.2	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				1			1		1
Absence of threats				5			5		5
Species mobility capacity				7			7		7
Site Context Score				35			25		30
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.88**			**1.34**		**1.61**

	Greenridge AU6 12.3.20 Non-remnant							
Species Stocking Rate (SSR)	AU Koala density 0.4	Site 972-973		Score	Site 960-961		Score	Average Score
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10	10
Species usage of the site (habitat type & evidenced usage)				5			5	5
Approximate density (per ha)		0.17		10	0.17		10	10
Role/importance of species population on site*				5			5	5
Total SRR score (out of 70)				30			30	30
Max SRR Score				*70*			*70*	*70*
SRR Score (out of 4				**1.71**			**1.71**	**1.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.06	1.83	1.63	2.19	2.01	2.24	1.98	0.53	*1.81*
Site Context Score (out of 3)	2.06	1.78	1.82	2.01	1.96	1.61	2.38	1.61	*1.88*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.83*	*5.90*	*4.31*	*7.91*	*6.54*	*7.56*	*6.94*	*3.85*	*6.14*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								11.88	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***3.8***	***3.85***

TABLE A6.23 GREENRIDGE AU6 RE 12.3.20 NON-REMNANT WITHOUT OFFSET QUALITY FOR KOALA

START SCORE: 4

Assessment Unit - Regional Ecosystem	Greenridge AU6 12.3.20 Non-remnant								
Site Reference	Benchmark 12.3.20	Site 972-973			Site 960-961			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100.0	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25.0	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	2	50.0	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50.0	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50.0	3	25.0	3
Tree subcanopy height	8	0	0.0	0	2	25.0	3	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	3	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	2	8.9	0
Subcanopy cover	20	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	2	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95.0	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Number of large trees (ha)	165	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95		0	95.0	0
Quality and availability of food and foraging habitat: Koala				0			0		0
Quality and availability of shelter: Koala				1			0		1
Site Condition Score				8.5			30		17.5
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**0.26**			**0.90**		**0.53**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		7.75	2	>200	10
Connectivity									
Foraging/breeding habitat			0			4.31		2.2	
Dispersal habitat			61.79	2		9.46	0	35.6	2
Context									
Foraging/breeding habitat			24.41			47.53		36.0	
Dispersal habitat			43.00	4		25.41	4	34.2	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				1			1		1
Absence of threats				5			5		5
Species mobility capacity				7			7		7
Site Context Score				35			25		30
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**1.88**			**1.34**		**1.61**

	Greenridge AU6 12.3.20 Non-remnant								
Species Stocking Rate (SSR)	**AU Koala density 0.4**	Site 972-973			Site 960-961				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				5			5		5
Approximate density (per ha)		0.17		10	0.17		10		10
Role/importance of species population on site*				5			5		5
Total SRR score (out of 70)				30			30		30
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**1.71**			**1.71**		**1.71**

Final habitat quality score (weighted)	Tabooba AU1 RE12.8.16 remnant	Tabooba AU2 RE12.8.16 Advanced Regrowth	Tabooba AU3 RE12.8.16 Young Regrowth	Tabooba AU4 RE12.8.14 Remnant	Tabooba AU5 RE12.8.14 Advanced Regrowth	Greenridge AU4 RE12.3.20 Remnant	Greenridge AU5 RE12.3.20 Regrowth	Greenridge AU6 RE12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 3)	2.21	1.47	0.60	2.19	1.55	2.19	1.98	0.53	*1.59*
Site Context Score (out of 3)	2.04	1.74	1.79	1.98	1.90	1.61	2.33	1.61	*1.85*
Species Stocking Rate Score (out of 4)	3.71	2.29	0.86	3.71	2.57	3.71	2.57	1.71	*2.49*
Habitat Quality score (out of 10)	*7.96*	*5.50*	*3.25*	*7.89*	*6.02*	*7.51*	*6.88*	*3.85*	*5.84*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								11.88	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***3.8***	***3.85***

TABLE A6.24 GREENRIDGE AU6 RE 12.3.20 NON-REMNANT WITH OFFSET QUALITY FOR KOALA

START SCORE: 7

Assessment Unit - Regional Ecosystem	Greenridge AU6 12.3.20 Non-remnant								
Site Reference	Benchmark 12.3.20	Site 972-973			Site 960-961			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	5	100	100.0	5	50.0	5
Native plant species richness - trees	4	0	0.0	5	1	25.0	5	12.5	5
Native plant species richness - shrubs	4	0	0.0	5	2	50.0	5	25.0	5
Native plant species richness - grasses	2	0	0.0	5	1	50.0	5	25.0	5
Native plant species richness - forbs	8	3	37.5	5	5	62.5	5	50.0	5
Tree canopy height	16	0	0.0	5	8	50.0	5	25.0	5
Tree subcanopy height	8	0	0.0	5	2	25.0	5	12.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	5	5	41.7	5	20.8	5
Tree canopy cover (EDL)	70	0	0.0	5	12.5	17.9	5	8.9	5
Subcanopy cover	20	0	0.0	5	0	0.0	5	0.0	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	5	6.25	13.9	5	6.9	5
Shrub canopy cover	15	0	0.0	5	1	6.7	5	3.3	5
Native grass cover	20	0	0.0	5	19	95.0	5	47.5	5
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Number of large trees (ha)	165	0	0.0	5	0	0.0	5	0.0	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	95		10	95	0.0	10	95.0	10
Quality and availability of food and foraging habitat: Koala				10			10		10
Quality and availability of shelter: Koala				10			10		10
Site Condition Score				90			90		90.0
MAX Site Condition Score				*100*			*100*		*100*
Site Condition Score - out of 3				**2.70**			**2.70**		**2.70**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Koala habitat (foraging/breeding/dispersal)			>200	10		7.75	2	>200	10
Connectivity									
Foraging/breeding habitat			0			4.31		2.2	
Dispersal habitat			61.79	2		9.46	0	35.6	2
Context									
Foraging/breeding habitat			24.41			47.53		36.0	
Dispersal habitat			43.00	4		25.41	4	34.2	4
Ecological Corridors				6			6		6
Role of site location to species overall population in the state				1			1		1
Absence of threats				11			11		10
Species mobility capacity				7			7		7
Site Context Score				41			31		36
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3				**2.20**			**1.66**		**1.93**

	Greenridge AU6 12.3.20 Non-remnant								
Species Stocking Rate (SSR)	**AU Koala density 0.4**	Site 972-973			Site 960-961				Average Score
				Score			Score		
Presence detected on or adjacent to site (neighbouring property with connecting habitat)				10			10		10
Species usage of the site (habitat type & evidenced usage)				5			5		5
Approximate density (per ha)		0.17		10	0.17		10		10
Role/importance of species population on site*				10			10		10
Total SRR score (out of 70)				35			35		35
Max SRR Score				*70*			*70*		*70*
SRR Score (out of 4				**2.00**			**2.00**		**2.00**

Final habitat quality score (weighted)	**Tabooba AU1 RE12.8.16 remnant**	**Tabooba AU2 RE12.8.16 Advanced Regrowth**	**Tabooba AU3 RE12.8.16 Young Regrowth**	**Tabooba AU4 RE12.8.14 Remnant**	**Tabooba AU5 RE12.8.14 Advanced Regrowth**	**Greenridge AU4 RE12.3.20 Remnant**	**Greenridge AU5 RE12.3.20 Regrowth**	**Greenridge AU6 RE12.3.20 Non-**	**Average/ Final**
Site Condition score (out of 3)	2.63	2.55	2.33	2.34	2.34	2.70	2.40	2.70	*2.50*
Site Context Score (out of 3)	2.25	2.20	2.17	2.20	2.22	1.77	2.65	1.93	*2.16*
Species Stocking Rate Score (out of 4)	3.71	3.71	2.57	3.71	3.71	3.71	3.71	2.00	*3.31*
Habitat Quality score (out of 10)	*8.59*	*8.46*	*7.07*	*8.25*	*8.28*	*8.18*	*8.77*	*6.63*	*7.95*
Assessment Unit area (ha)	49.8	145.02	48.1	50.62	19.8	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								11.88	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.0***	***0.0***	***6.6***	***6.63***

Appendix L: Offset HQS tables GHFF habitat

Table A7.1 **TABOOBA AU1 RE 12.8.16 REMNANT START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 6

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 remnant								
Site Reference	Benchmark	Site 472-473			Site 474-475			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	4	100.0	100.0		100.0	4
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	4	10.0	142.9		135.7	4
Native plant species richness - grasses	7	10	142.9	4	16.0	228.6		185.7	4
Native plant species richness - forbs	29	31	106.9	4	34.0	117.2		112.1	4
Tree canopy height	20	15	75.0	3	18.0	90.0		82.5	3
Tree subcanopy height	8	8	100.0	4	10.0	125.0		112.5	4
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	3	14.0	100.0		91.1	3
Tree canopy cover (EDL)	41	44.1	107.6	4	83.0	202.4		155.0	4
Subcanopy cover	17	17.5	102.9	4	1.0	5.9		54.4	4
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	4	42.0	144.8		125.5	4
Shrub canopy cover	4	0	0.0	0	0.0	0.0		0.0	0
Native grass cover	45	27	48.9	2	27.0	60.0		54.4	2
Organic litter	21	34	16.4	1	6.0	29.0		22.5	1
Number of large eucalypt trees (ha)	33	10	30.3	1	14.0	42.4		36.4	1
Coarse woody debris (m/ha)	336	18	5.4	1	170.0	50.6		28.0	1
Non-native plant cover	0	40		10	15.0			27.5	10
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.29	3		0.22		0.25	3
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness				10			10	10	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness				3					3
Site Condition Score				71.5			73.5		75.5
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.32**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1094.79			1094.79		1094.8	
Regrowth			722.0	10		722.0	10	722.0	10
Connectivity									
No. active GHFF camps within 20km				2				2.0	2
Context									
% GHFF foraging habitat within 20 km			32.4	4		32.1		32.3	4
Ecological Corridors				0					0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km				2				1.0	2
Absence of threats				4					3
Site Context Score				22			23		23
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.23**

	Tabooba AU 1 - RE12.8.16 remnant								
	Benchmark	Site 472-473			Site 474-475			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	10	30.3	4	14.0	42.4		36.4	4
Timing of GHFF Biological Resources				9.25			9.2		9.25
Species Stocking Rate Score				13.25			13.3		13.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.99**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.68	2.10	1.88	1.85	1.35	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	6.08	5.55	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.46	*358.82*
Total offset area (ha) for this MINES	49.80								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***5.54***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***5.54***

Table A7.2 **TABOOBA AU1 RE 12.8.16 REMNANT QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 remnant								
Site Reference	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	5	10.0	142.9	5	135.7	5
Native plant species richness - grasses	7	10	142.9	5	16.0	228.6	5	185.7	5
Native plant species richness - forbs	29	31	106.9	5	34.0	117.2	5	112.1	5
Tree canopy height	20	15	75.0	5	18.0	90.0	5	82.5	5
Tree subcanopy height	8	8	100.0	5	10.0	125.0	5	112.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	5	14.0	100.0	5	91.1	5
Tree canopy cover (EDL)	41	44.1	107.6	5	83.0	202.4	5	155.0	5
Subcanopy cover	17	17.5	102.9	5	1.0	5.9	2	54.4	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	5	42.0	144.8	5	125.5	5
Shrub canopy cover	4	0	0.0	0	0.0	0.0	0	0.0	0
Native grass cover	45	22	48.9	1	27.2	60.4	1	54.7	3
Organic litter	21	3.4	16.2	3	6.2	29.5	1	22.9	3
Number of large trees (ha)	33	10	30.3	10	14.0	42.4	10	36.4	10
Coarse woody debris (m/ha)	336	18	5.4	0	170.0	50.6	1	28.0	2
Non-native plant cover	0	40		3	15.0		3	27.5	3
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.29	5		0.29	5	0.3	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			3	10		3	10	3.0	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2	5		2	5	2.0	5
Site Condition Score				69.5			78.5		73.5
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.26**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1094.79			1094.79		1094.8	
Regrowth			722.0	10		722.0	10	722.0	10
Connectivity									
No. active GHFF camps within 20km			2	2		2	2	2.0	2
Context									
% GHFF foraging habitat within 20 km			32.2	4		32.1	4	32.1	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			1	2		1	2	1.0	2
Absence of threats				3.5			4		5
Site Context Score				21.5			22		23
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.23**

	Tabooba AU 1 - RE12.8.16 remnant								
Species Stocking Rate (SSR)	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	10	30.3	6	14.0	42.4	6	36.4	6
Timing of GHFF Biological Resources				9.25			9.25		9.25
Species Stocking Rate Score				15.25			15.3		15.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.29**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced	Tabooba AU2 RE 12.8.16 Young	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	49.80								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***5.78***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***5.78***

Table A7.3 **TABOOBA AU1 RE 12.8.16 REMNANT QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU 1 - RE12.8.16 remnant								
Site Reference	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100.0	100.0	5	100.0	5
Native plant species richness - trees	7	6	85.7	2.5	6.0	85.7	2.5	85.7	2.5
Native plant species richness - shrubs	7	9	128.6	5	10.0	142.9	5	135.7	5
Native plant species richness - grasses	7	10	142.9	5	16.0	228.6	5	185.7	5
Native plant species richness - forbs	29	31	106.9	5	34.0	117.2	5	112.1	5
Tree canopy height	20	15	75.0	5	18.0	90.0	5	82.5	5
Tree subcanopy height	8	8	100.0	5	10.0	125.0	5	112.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	11.5	82.1	5	14.0	100.0	5	91.1	5
Tree canopy cover (EDL)	41	44.1	107.6	5	83.0	202.4	5	155.0	5
Subcanopy cover	17	17.5	102.9	5	1.0	5.9	1	54.4	3
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	30.8	106.2	5	42.0	144.8	5	125.5	5
Shrub canopy cover	0	0	0.0	5	0.0	0.0	5	0.0	5
Native grass cover	45	22	48.9	3	27.2	60.4	3	54.7	3
Organic litter	21	3.4	16.2	5	6.2	29.5	5	22.9	5
Number of large trees (ha)	33	10	30.3	10	14.0	42.4	10	36.4	10
Coarse woody debris (m/ha)	336	18	5.4	5	170.0	50.6	5	28.0	5
Non-native plant cover	0	40		5	15.6		5	27.5	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.25	5		0.25	5	0.3	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			1	10		1	10	3.0	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			1	10		2	10	2.0	5
Site Condition Score				90.5			92.5		87.5
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.69**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1094.75			1094.75		1094.8	
Regrowth			722.0	10		722.0	10	722.0	10
Connectivity									
No. active GHFF camps within 20km			2	2		2	2	2.0	2
Context									
% GHFF foraging habitat within 20 km			32.2	4		32.1	4	32.1	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			2	2		3	2	1.0	2
Absence of threats *				5			0		10
Site Context Score				27			27		28
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.50**

	Tabooba AU 1 - RE12.8.16 remnant								
Species Stocking Rate (SSR) **	Benchmark 12.8.16	Site 472-473			Site 474-475			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	10	30.3	6	14.0	42.4	6	36.4	6
Timing of GHFF Biological Resources				9.25			9.25		9.25
Species Stocking Rate Score				15.25			15.3		15.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.29**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced	Tabooba AU2 RE 12.8.16 Young	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.91	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.29	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.11	1.39	2.18	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	*6.54*
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.21	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	49.80								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***6.48***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.48***

Table A7.4 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 5

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
Site Reference	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	50	50.0	5	100	100.0	5	87.5	5
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.5	67.9	2.5
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	1	14.3	0	46.4	2.5
Native plant species richness - grasses	7	9	128.6	5	8	114.3	5	3	42.9	2.5	5	71.4	2.5	89.3	2.5
Native plant species richness - forbs	29	29	100.0	5	32	110.3	5	15	51.7	2.5	18	62.1	2.5	81.0	2.5
Tree canopy height	20	10	50.0	3	16	80.0	5	8	40.0	3	10	50.0	3	55.0	3
Tree subcanopy height	8	5	62.5	3	8	100.0	5	3	37.5	3	4	50.0	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	3	12	85.7	5	5.5	39.3	3	7.0	50.0	3	57.1	3
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	0	35	85.4	5	64.0	5
Subcanopy cover	17	6	35.3	2	7	41.2	2	3	17.6	2	11.5	67.6	5	40.4	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	5	25.3	87.1	5	3.0	10.3	2	23.3	80.2	5	57.1	5
Shrub canopy cover	4	1.5	37.5	3	4.5	112.5	5	0	0.0	0	19	475.0	3	156.3	5
Native grass cover	45	3.2	7.1	0	43	95.6	5	61	135.6	5	2.8	6.2	0	61.1	3
Organic litter	21	10.8	51.4	5	5	23.8	3	2	9.5	0	0.8	3.8	0	22.1	3
Number of large eucalypt trees (ha)	33	8	24.2	5	12	36.4	5	12	36.4	5	6	18.2	5	28.8	5
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	2	79	23.5	2	39.1	2
Non-native plant cover	0	5		5	20		5	35		10	15		5	18.8	5
			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.43	5		0.51	8		0.51	8		0.43	5	0.47	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			2	5		4	10		4	10		4	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2	5		3	10		3	10		3	10	2.75	10
Site Condition Score				66			86			68			60.5		71.00
MAX Site Condition Score				*130*			*130*			*130*			*130*		*130*
Site Condition Score - out of 4															**2.18**
Site Context			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Size of patch (ha)															
Remnant			1472.92			1472.92			1472.92			1472.92		1472.9	
Regrowth			343.6	10		343.6	10		343.6	10		343.6	10	343.6	10
Connectivity															
No. active GHFF camps within 20km			3	4		2	2		2	2		2	2	2.3	2
Context															
% GHFF foraging habitat within 20 km			31.9	4		31.6	4		31.6	4		31.3	4	31.6	4
Ecological Corridors				0			0			0			0		0
Role of site location to species overall population in the state															
No. of active ≥ level three GHFF camps within a 20km			2	4		1	2		1	2		1	2	1.3	2
Absence of threats				3.5			3			3			3.5		2.5
Site Context Score				25.5			21			21			21.5		20.5
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3															**1.10**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
Species Stocking Rate (SSR)	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	8	24.2	2	12	36.4	4	12	36.4	4	6	18.2	1	28.8	4
Timing of GHFF Biological Resources				9.25			10			9.25			9.25		9.44
Species Stocking Rate Score				11.3			14.0			13.3			11.3		13.4
MAX Species Stocking Rate Score				*20*			*20*			*20*			*20*		*20*
SRR Score - out of 3															**2.02**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced Regrowth**	**Tabooba AU2 RE 12.8.16 Young Regrowth**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced Regrowth**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	5.54	5.30	4.99	5.96	5.44	6.08	5.55	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.4	*358.82*
Total offset area (ha) for this MNES	0.00	145.02	0.00	0.00	0.00	0.00	0.00	0.00	
Size Weighting	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***5.30***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	*5.30*

Table A7.5 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
Site Reference	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average %	
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	benchmark	Average Score
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	3	100	100.0	3	50	50.0	3	100	100.0	3	87.5	3
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.5	67.9	2.5
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	1	14.3	0	46.4	2.5
Native plant species richness - grasses	7	9	128.6	2.5	8	114.3	2.5	3	42.9	2.5	5	71.4	2.5	89.3	2.5
Native plant species richness - forbs	29	29	100.0	2.5	32	110.3	2.5	15	51.7	2.5	18	62.1	2.5	81.0	2.5
Tree canopy height	20	10	50.0	3	16	80.0	3	8	40.0	3	10	50.0	3	55.0	3
Tree subcanopy height	8	5	62.5	3	8	100.0	3	3	37.5	3	4	50.0	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	3	12	85.7	3	5.5	39.3	3	7.0	50.0	3	57.1	3
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	0	35	85.4	5	64.0	5
Subcanopy cover	17	6	35.3	2	7	41.2	2	3	17.6	2	11.5	67.6	2	40.4	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	2	25.3	87.1	5	3.0	10.3	2	23.3	80.2	5	57.1	2
Shrub canopy cover	4	1.5	37.5	0	4.5	112.5	0	0	0.0	0	19	475.0	0	156.3	0
Native grass cover	45	3.2	7.1	0	43	95.6	5	61	135.6	5	2.8	6.2	0	61.1	3
Organic litter	21	10.8	51.4	3	5	23.8	3	2	9.5	0	0.8	3.8	0	22.1	3
Number of large trees (ha)	33	8	24.2	5	12	36.4	5	12	36.4	5	6	18.2	5	28.8	5
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	2	79	23.5	2	39.1	2
Non-native plant cover	0	5		3	20		3	35		3	15		3	18.8	3
			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.43	5		0.51	8		0.51	8		0.43	5	0.47	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			2	5		4	5		4	5		4	10	3.50	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2	5		3	10		3	10		3	10	2.75	10
Site Condition Score				49			65			56			53.5		54.00
MAX Site Condition Score				*130*			*130*			*130*			*130*		*130*
Site Condition Score - out of 4															**1.66**
Site Context			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Size of patch (ha)															
Remnant			1472.92			1472.92			1472.92			1472.92		1472.9	
Regrowth			343.6	10		343.6	10		343.6	10		343.6	10	343.6	10
Connectivity															
No. active GHFF camps within 20km			3	4		2	2		2	2		2	2	2.3	2
Context															
% GHFF foraging habitat within 20 km			31.9	4		31.6	4		31.6	4		31.3	4	31.6	4
Ecological Corridors				0			0			0			0		0
Role of site location to species overall population in the state															
No. of active ≥ level three GHFF camps within a 20km			2	4		1	2		1	2		1	2	1.3	2
Absence of threats				2			1.5			1.5			2		2.5
Site Context Score				24			19.5			19.5			20		20.5
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3															**1.10**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average %	
Species Stocking Rate (SSR)	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	benchmark	Average Score
Abundance of large trees	33	8	24.2	2	12	36.4	4	12	36.4	4	6	18.2	2	28.8	4
Timing of GHFF Biological Resources				9.25			10			9.25			9.25		9.44
Species Stocking Rate Score				11.3			12.0			11.3			11.3		11.4
MAX Species Stocking Rate Score				*20*			*20*			*20*			*20*		*20*
SRR Score - out of 3															**1.72**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.62*
Total offset area (ha) for this MINES	49.80								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***5.78***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	*5.78*

Table A7.6 **TABOOBA AU2 RE 12.8.16 ADVANCED REGROWTH QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
Site Reference	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition															
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	50	50.0	5	100	100.0	5	87.5	5
Native plant species richness - trees	7	3	42.9	2.5	5	71.4	2.5	5	71.4	2.5	6	85.7	2.5	67.9	2.5
Native plant species richness - shrubs	7	5	71.4	2.5	3	42.9	2.5	4	57.1	2.5	1	14.3	0	46.4	2.5
Native plant species richness - grasses	7	9	128.6	5	8	114.3	5	3	42.9	2.5	5	71.4	2.5	89.3	2.5
Native plant species richness - forbs	29	29	100.0	5	32	110.3	5	15	51.7	2.5	18	62.1	2.5	81.0	2.5
Tree canopy height	20	10	50.0	5	16	80.0	5	8	40.0	5	10	50.0	5	55.0	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	3	37.5	5	4	50.0	5	62.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	14	7.5	53.6	5	12	85.7	5.0	5.5	39.3	5	7.0	50.0	5	57.1	5
Tree canopy cover (EDL)	41	23.5	57.3	5	43.5	106.1	5	3	7.3	5	35	85.4	5	64.0	5
Subcanopy cover	17	6	35.3	5	7	41.2	5	3	17.6	5	11.5	67.6	5	40.4	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	14.8	50.9	5	25.3	87.1	5	3.0	10.3	5	23.3	80.2	5	57.1	5
Shrub canopy cover	4	1.5	37.5	5	4.5	112.5	5	0	0.0	5	19	475.0	5	156.3	5
Native grass cover	45	3.2	7.1	3	43	95.6	5	61	135.6	5	2.8	6.2	3	61.1	5
Organic litter	21	10.8	51.4	5	5	23.8	5	2	9.5	5	0.8	3.8	5	22.1	5
Number of large trees (ha)	33	8	24.2	10	12	36.4	10	12	36.4	10	6	18.2	10	28.8	10
Coarse woody debris (m/ha)	336	175	52.1	5	177	52.7	5	94	28.0	5	79	23.5	5	39.1	5
Non-native plant cover	0	5		5	20		5	35		5	15		5	18.8	10
			Value	Score		Value	Score		Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.43	5		0.51	8		0.51	8		0.43	5	0.47	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			2	10		4	10		4	10		4	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			2	10		3	10		3	10		3	10	2.75	10
Site Condition Score				88			93			88			80.5		90.00
MAX Site Condition Score				*130*			*130*			*130*			*130*		*130*
Site Condition Score - out of 4															**2.77**
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average score**
Size of patch (ha)															
Remnant			1472.92			1472.92			1472.92			1472.92		1472.9	
Regrowth			343.6	10		343.6	10		343.6	10		343.6	10	343.6	10
Connectivity															
No. active GHFF camps within 20km			3	4		2	2		2	2		2	2	2.3	2
Context															
% GHFF foraging habitat within 20 km			31.9	4		31.6	4		31.6	4		31.3	4	31.6	4
Ecological Corridors				0			0			0			0		0
Role of site location to species overall population in the state															
No. of active ≥ level three GHFF camps within a 20km			2	4		1	2		1	2		1	2	1.3	2
Absence of threats *				5			5			5			5		10
Site Context Score				31			27			27			27		28
MAX Site Context Score				*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3															**1.50**

	Tabooba AU2 - RE 12.8.16 Advanced Regrowth														
Species Stocking Rate (SSR) **	Benchmark	Site 470-471			Site 683-684			Site 685-686			Site 734-735			Average % benchmark	Average Score
	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	8	24.2	6	12	36.4	6	12	36.4	6	6	18.2	5	28.8	6
Timing of GHFF Biological Resources				9.25			10			9.25			9.25		9.4375
Species Stocking Rate Score				15.3			16.0			15.3			15.3		15.4
MAX Species Stocking Rate Score				*20*			*20*			*20*			*20*		*20*
SRR Score - out of 3															**2.32**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.68	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES	49.80								
Size Weighting	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***6.48***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	*6.48*

Table A7.7 **TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 5

Assessment Unit - Regional Ecosystem	- RE 12.8.16 Advar	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference		Benchmark	Site 687-688			Site 756-757			Average % benchmark	Average Score
	Average Score	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition										
Recruitment of woody perennial species in EDL	5	100	66.7	66.7	3	100	100.0	5	83.4	5
Native plant species richness - trees	2.5	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	2.5	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	2.5	7	7	100.0	5	8	114.3	5	107.2	5
Native plant species richness - forbs	2.5	29	17	58.6	2.5	27	93.1	5	75.9	2.5
Tree canopy height	1	20	15	75.0	5	8	40.0	1	57.5	1
Tree subcanopy height	1	8	5	62.5	3	3	37.5	1	50.0	1
Tree canopy height (average of emergent, canopy, sub-canopy)	1	14	10	71.4	5	5.5	39.3	3.0	55.4	1
Tree canopy cover (EDL)	5	41	28	68.3	5	28	68.3	5	68.3	5
Subcanopy cover	2	17	7	41.2	2	3.5	20.6	2	30.9	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	5	29	17.5	60.3	5	15.75	54.3	5.0	57.3	5
Shrub canopy cover	5	4	0	0.0	0	0	0.0	0	0.0	0
Native grass cover	1	45	63	140.0	5	2	4.4	0	72.2	1
Organic litter	1	21	1	4.8	0	3.8	18.1	1	11.4	1
Number of large eucalypt trees (ha)	5	33	2	6.1	5	4	12.1	5	9.1	5
Coarse woody debris (m/ha)	2	336	277	82.4	5	61	18.2	2	50.3	5
Non-native plant cover	5	0	30	30	10	10	10	5	20.0	5
	Average score			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores	5			0.51	8		0.45	5	0.48	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness	10			4	10		4.0	10	4	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness	10			3	10		2.0	5	2.5	10
Site Condition Score	71.00				78.5			63		71.5
MAX Site Condition Score	*130*				*130*			*130*		*130*
Site Condition Score - out of 4	**2.18**									**2.20**
Site Context	**Average score**			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)										
Remnant				1472.5			1472.5		1472.5	
Regrowth	10			343.5	10		343.5	10	343.5	10
Connectivity										
No. active GHFF camps within 20km	2				2			2		2
Context										
% GHFF foraging habitat within 20 km	4			32.1	4		31.1	4	31.6	4
Ecological Corridors	0				0			0		0
Role of site location to species overall population in the state										
No. of active ≥ level three GHFF camps within a 20km	2				2			2		2
Absence of threats	2.5				2			2.5		2.5
Site Context Score	20.5				20			20.5		20.5
MAX Site Context Score	*56*				*56*			*56*		*56*
Site Context Score - out of 3	**1.10**									**1.10**

	- RE 12.8.16 Advar	Tabooba AU3 - RE 12.8.16 Young Regrowth								
		Benchmark	Site 687-688			Site 756-757			Average % benchmark	Average Score
Species Stocking Rate (SSR)	Average Score	12.8.16	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	4	33	2	6.1	2	4	12.1	2	9.1	2
Timing of GHFF Biological Resources	9.4				9.25			9.25		9.25
Species Stocking Rate Score	13.4				11.3			11.3		11.3
MAX Species Stocking Rate Score	*20*				*20*			*20*		*20*
SRR Score - out of 3	**2.02**				**1.6875**			**1.6875**		**1.6875**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	*6.08*	*5.55*	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES			48.10					0.00	
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***4.99***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***4.99***

Table A7.8 **TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 1

Assessment Unit - Regional Ecosystem	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference	Benchmark 12.8.16	Site 687-688			Site 756-757			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	66.7	66.7	0	100	100.0	0	83.4	0
Native plant species richness - trees	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	7	7	100.0	2.5	8	114.3	2.5	107.1	2.5
Native plant species richness - forbs	29	17	58.6	2.5	27	93.1	2.5	75.9	2.5
Tree canopy height	20	15	75.0	0	8	40.0	0	57.5	0
Tree subcanopy height	8	5	62.5	0	7	37.5	0	50.0	0
Tree canopy height (average of emergent, canopy, sub-canopy)	14	10	71.4	0	5.5	39.3	0	55.4	0
Tree canopy cover (EDL)	41	28	68.3	0	28	68.3	0	68.3	0
Subcanopy cover	17	7	41.2	0	3.5	20.6	0	30.9	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	17.5	60.3	0	15.75	54.3	0	57.3	0
Shrub canopy cover	4	0	0.0	0	0	0.0	0	0.0	0
Native grass cover	45	63	140.0	0	2	4.4	0	72.2	0
Organic litter	21	1	4.8	0	3.8	18.1	0	11.4	0
Number of large trees (ha)	33	2	6.1	0	4	12.1	0	9.1	0
Coarse woody debris (m/ha)	336	277	82.4	0	61	18.2	0	50.3	0
Non-native plant cover	0	30	30	0	10	10	0		
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.51	0		0.45	0	0.48	0
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			4	0		4.0	0	4.00	0
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			3	0		2.0	0	2.50	0
Site Condition Score				10			10		10
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**0.31**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1472.9			1472.9		1472.9	
Regrowth			343.5	10		343.5	10	343.5	10
Connectivity									
No. active GHFF camps within 20km			2	2		2	2	2	2
Context									
% GHFF foraging habitat within 20 km			32.1	4		31.7	4	31.9	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			1	2		1	2	1	2
Absence of threats				1			1.5		1
Site Context Score				19			19.5		18
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**0.96**

	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Species Stocking Rate (SSR)	Benchmark 12.8.16	Site 687-688			Site 756-757			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	33	2	6.1	0	4	12.1	0	9.1	0
Timing of GHFF Biological Resources				0			0		0
Species Stocking Rate Score				0.0			0.0		0.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3				**0**			**0**		**0**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced	Tabooba AU2 RE 12.8.16 Young	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES			48.10						
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***1.27***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	*1.27*

Table A7.9 **TABOOBA AU3 RE 12.8.16 YOUNG REGROWTH QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Site Reference	Benchmark 12.8.16	Site 687-688 Raw Data	Site 687-688 % Benchmark	Site 687-688 Score	Site 756-757 Raw Data	Site 756-757 % Benchmark	Site 756-757 Score	Average % benchmark	Average Score
Site Condition									
Recruitment of woody perennial species in EDL	100	66.7	66.7	3	100	100.0	5	83.4	5
Native plant species richness - trees	7	5	71.4	2.5	5	71.4	2.5	71.4	2.5
Native plant species richness - shrubs	7	4	57.1	2.5	3	42.9	2.5	50.0	2.5
Native plant species richness - grasses	7	7	100.0	5	8	114.3	5	107.1	5
Native plant species richness - forbs	29	17	58.6	2.5	27	93.1	5	75.9	2.5
Tree canopy height	20	15	75.0	5	8	40.0	3	57.5	3
Tree subcanopy height	8	5	62.5	3	3	37.5	3	50.0	3
Tree canopy height (average of emergent, canopy, sub-canopy)	14	10	71.4	5	5.5	39.3	5.0	55.4	5
Tree canopy cover (EDL)	41	28	68.3	5	28	68.3	5	68.3	5
Subcanopy cover	17	7	41.2	2	3.5	20.6	2	30.9	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	29	17.5	60.3	5	15.75	54.3	5.0	57.3	5
Shrub canopy cover	4	0	0.0	5	0	0.0	5	0.0	5
Native grass cover	45	63	140.0	5	2	4.4	5	72.2	5
Organic litter	21	9	4.8	5	3.8	18.1	5	11.4	5
Number of large trees (ha)	33	2	6.1	5	4	12.1	5	9.1	5
Coarse woody debris (m/ha)	336	27	82.4	5	61	18.2	5	50.3	5
Non-native plant cover	0	30	30	5	10	10	10	20.0	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.51	8		0.45	7	0.48	8
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			4	10		4.0	10	4	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			3	10		2.0	10	2.50	10
Site Condition Score				81.5			88		85.5
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.63**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1472.9			1472.9		1472.9	
Regrowth			343.5	10		343.5	10	343.5	10
Connectivity									
No. active GHFF camps within 20km			1	2		1	1	1	2
Context									
% GHFF foraging habitat within 20 km			32.1	4		31.7	4	31.9	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			1	2		1	1	1	2
Absence of threats *				5			5		10
Site Context Score				27			27		28
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.50**

	Tabooba AU3 - RE 12.8.16 Young Regrowth								
Species Stocking Rate (SSR) **	Benchmark 12.8.16	Site 687-688 Raw Data	Site 687-688 % Benchmark	Site 687-688 Score	Site 756-757 Raw Data	Site 756-757 % Benchmark	Site 756-757 Score	Average % benchmark	Average Score
Abundance of large trees	33	2	6.1	2	4	12.1	2	9.1	2
Timing of GHFF Biological Resources				9.25			9.25		9.25
Species Stocking Rate Score				11.3			11.3		11.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3				**1.6875**			**1.6875**		**1.6875**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced	Tabooba AU2 RE 12.8.16 Young	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES			48.10						
Size Weighting	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***5.82***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	*5.82*

Table A7.10 **TABOOBA AU4 RE 12.8.14 REMNANT START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 6

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.7	66.7	3	83.4	5
Native plant species richness - trees	6	8	133.3	5	9	150.0	5	141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.7	2.5	91.7	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0	5	118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0	5	171.4	5
Tree canopy height	22	18	81.8	5	15	68.2	3	75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5	3	68.2	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6	3	72.7	5
Tree canopy cover (EDL)	16	35	218.8	3	27	168.8	5	193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0	0	46.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1	5	122.6	5
Shrub canopy cover	4	3	75.0	5	1	25.0	3	50.0	5
Native grass cover	58	47	81.0	3	12	20.7	1	50.9	3
Organic litter	30	5	16.7	3	13	43.3	3	30.0	3
Number of large eucalypt trees (ha)	45	22	48.9	5	6	13.3	1	31.1	5
Coarse woody debris (m/ha)	336	128	38.1	2	5	1.5	0	19.8	2
Non-native plant cover	0	10		5	35		10	22.5	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.20	2		0.26	3	0.25	2
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			3.0	10		4	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2.6	5		2	5	2.00	5
Site Condition Score				75			70.5		75
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.31**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			125.9			1094.8		610.3	
Regrowth			1690.6	7		721.7	10	1206.1	10
Connectivity									
No. active GHFF camps within 20km			4	4		4	4	4.0	4
Context									
% GHFF foraging habitat within 20 km			31.5	4		32.4	4	32.0	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		3	6	3.0	6
Absence of threats				5			4.5		5
Site Context Score				26			28.5		29
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.55**

	Tabooba AU4 - RE 12.8.14 Remnant								
Species Stocking Rate (SSR)	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	22	48.9	4	6	13.3	1	31.1	4
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				14.0			12.0		14.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.1**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	*6.08*	*5.55*	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES				50.62				0.00	
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***5.96***	***0.00***	***0.00***	***0.00***	***0.00***	*5.96*

Table A7.11 **TABOOBA AU4 RE 12.8.14 REMNANT QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.7	66.7	3	83.4	5
Native plant species richness - trees	6	8	133.3	5	9	150.0	5	141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.7	2.5	91.7	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0	5	118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0	5	171.4	5
Tree canopy height	22	18	81.8	5	15	68.2	3	75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5	3	68.2	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6	3	72.7	5
Tree canopy cover (EDL)	16	35	218.8	3	27	168.8	5	193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0	0	46.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1	5	122.6	5
Shrub canopy cover	4	3	75.0	5	1	25.0	1	50.0	5
Native grass cover	58	47	81.0	3	12	20.7	1	50.9	3
Organic litter	30	5	16.7	3	13	43.3	3	30.0	3
Number of large trees (ha)	45	22	48.9	5	6	13.3	1	31.1	5
Coarse woody debris (m/ha)	336	128	38.1	2	5	1.5	0	19.8	2
Non-native plant cover	0	10		5	35		10	22.5	5
			Value	**Score**		**Value**	**Score**	**Average**	**Average Score**
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.24	2		0.26	1	0.25	2
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			3.0	10		4	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2.0	5		2	1	2.00	5
Site Condition Score				75			70.5		75
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.31**
Site Context			**Value**	**Score**		**Value**	**Score**	**Average**	**Average Score**
Size of patch (ha)									
Remnant			125.9			1094.8		610.3	
Regrowth			1690.6	7		721.7	10	1206.1	10
Connectivity									
No. active GHFF camps within 20km			4	4		4	4	4.0	4
Context									
% GHFF foraging habitat within 20 km			31.5	4		32.4	4	32.0	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		3	6	3.0	6
Absence of threats				4			3.5		5
Site Context Score				25			27.5		29
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.55**

	Tabooba AU4 - RE 12.8.14 Remnant								
Species Stocking Rate (SSR)	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	22	48.9	4	6	13.3	1	31.1	4
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				14.0			12.0		14.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.1**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced**	**Tabooba AU2 RE 12.8.16 Young**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES				50.62					
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***5.96***	***0.00***	***0.00***	***0.00***	***0.00***	***5.96***

Table A7.12 **TABOOBA AU4 RE 12.8.14 REMNANT QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 7

Assessment Unit - Regional Ecosystem	Tabooba AU4 - RE 12.8.14 Remnant								
Site Reference	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	66.7	66.7		83.4	5
Native plant species richness - trees	6	8	133.3	5	9	150.0		141.7	5
Native plant species richness - shrubs	6	7	116.7	5	4	66.7		91.7	5
Native plant species richness - grasses	8	9	112.5	5	10	125.0		118.8	5
Native plant species richness - forbs	21	26	123.8	5	46	219.0		171.4	5
Tree canopy height	22	18	81.8	5	15	68.2		75.0	5
Tree subcanopy height	11	10	90.9	5	5	45.5		68.2	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14	84.8	5	10	60.6		72.7	5
Tree canopy cover (EDL)	16	35	218.8	5	27	168.8		193.8	5
Subcanopy cover	15	14	93.3	5	0	0.0		46.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	13.5	87.1		122.6	5
Shrub canopy cover	4	3	75.0	5	1	25.0		50.0	5
Native grass cover	58	47	81.0	5	12	20.7		50.9	5
Organic litter	30	5	16.7	5	13	43.3		30.0	5
Number of large trees (ha)	45	22	48.9	10	6	13.3		31.1	5
Coarse woody debris (m/ha)	336	128	38.1	5	5	1.5		19.8	5
Non-native plant cover	0	10		5	35			22.5	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.24	2		0.26		0.25	2
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			3.0	10		4	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			2.0	5		4		2.00	5
Site Condition Score				85			83		80
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.46**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			125.9			1094.8		610.3	
Regrowth			1690.6	7		721.7	10	1206.1	10
Connectivity									
No. active GHFF camps within 20km			4	4		4		4.0	4
Context									
% GHFF foraging habitat within 20 km			31.5	4		32.4		32.0	4
Ecological Corridors				0					0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		3		3.0	6
Absence of threats *				9					10
Site Context Score				30			33		34
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.82**

	Tabooba AU4 - RE 12.8.14 Remnant								
Species Stocking Rate (SSR) **	Benchmark	Site 680-681			Site 747-748			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	22	48.9	6	6	13.3		31.1	6
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				16.0			14.0		16.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.4**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES				50.62					
Size Weighting	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***6.68***	***0.00***	***0.00***	***0.00***	***0.00***	*6.68*

Table A7.13 **TABOOBA AU5 RE 12.8.14 ADVANCED REGROWTH START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 5

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	5	7	116.7	5	133.3	5
Native plant species richness - grasses	8	9	112.5	5	9	112.5	5	112.5	5
Native plant species richness - forbs	21	27	128.6	5	48	228.6	5	178.6	5
Tree canopy height	22	12	54.5	3	10	45.5	3	50.0	3
Tree subcanopy height	11	6	54.5	3	5	45.5	3	50.0	3
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	3	7.5	45.5	3	50.0	3
Tree canopy cover (EDL)	16	44	275.0	3	40.5	253.1	3	264.1	3
Subcanopy cover	15	5	33.3	2	10.5	70.0	5	51.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	5
Shrub canopy cover	4	2	50.0	5	1	25.0	3	37.5	3
Native grass cover	58	29	50.0	3	16	27.6	1	38.8	1
Organic litter	30	1	3.3	0	6	20.0	3	11.7	3
Number of large eucalypt trees (ha)	45	10	22.2	5	4	8.9	5	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	1	47.9	2
Non-native plant cover	0	20		5	20		5	20.0	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.31	5		0.21	1	0.26	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			4	10		3	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2	5		2	5	2	5
Site Condition Score				76			69		72
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.22**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1472.9			1472.9		1472.9	
Regrowth			343.5	10		343.5	10	343.5	10
Connectivity									
No. active GHFF camps within 20km			5	6		2	1	3.5	4
Context									
% GHFF foraging habitat within 20 km			32.2	4		31.9	4	32.1	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			4	8		1	2	2.5	6
Absence of threats				3			3		2.5
Site Context Score				31			21		26.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.42**

	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Species Stocking Rate (SSR)	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	10	22.2	2	4	8.9	1	15.6	2
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				12.0			12.0		12.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.8**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced Regrowth**	**Tabooba AU2 RE 12.8.16 Young Regrowth**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced Regrowth**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	*6.08*	*5.55*	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES					19.80			0.00	
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***5.44***	***0.00***	***0.00***	***0.00***	***5.44***

Table A7.14 TABOOBA AU5 RE 12.8.14 ADVANCED OFFSET QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX

SCORE WITHOUT OFFSET: 5

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	2.5	7	116.7	2.5	133.3	2.5
Native plant species richness - grasses	5	5	112.5	2.5	5	112.5	2.5	112.5	2.5
Native plant species richness - forbs	21	27	128.6	2.5	48	228.6	2.5	178.6	2.5
Tree canopy height	22	12	54.5	3	10	45.5	3	50.0	3
Tree subcanopy height	11	6	54.5	3	5	45.5	3	50.0	0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	3	7.5	45.5	3	50.0	3
Tree canopy cover (EDL)	16	44	275.0	5	40.5	253.1	5	264.1	5
Subcanopy cover	15	5	33.3	2	10.5	70.0	2	51.7	2
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	2
Shrub canopy cover	4	2	50.0	0	1	25.0	0	37.5	0
Native grass cover	58	29	50.0	3	16	27.6	1	38.8	1
Organic litter	30	1	3.3	0	6	20.0	3	11.7	3
Number of large trees (ha)	45	10	22.2	5	4	8.9	1	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	1	47.9	2
Non-native plant cover	0	20		3	20		3	20.0	3
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.31	3		0.21	1	0.26	3
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			4	5		3	3	3.50	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			2	5		2	5	2.00	5
Site Condition Score				56.5			51.5		51.5
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**1.58**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1472.9			1472.9		1472.9	
Regrowth			343.5	10		343.5	10	343.5	10
Connectivity									
No. active GHFF camps within 20km			5	6		2	1	3.5	4
Context									
% GHFF foraging habitat within 20 km			32.2	4		31.9	4	32.1	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			4	8		1	1	2.5	6
Absence of threats				1.5			1.5		2.5
Site Context Score				29.5			19.5		26.5
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.42**

	Tabooba AU5 - 12.8.14 Advanced Regrowth								
	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	10	22.2	2	4	8.9	1	15.6	2
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				12.0			12.0		12.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.8**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES					19.80				
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***4.80***	***0.00***	***0.00***	***0.00***	***4.80***

Table A7.15 **TABOOBA AU5 RE 12.8.14 ADVANCED REGROWTH QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 6

Assessment Unit - Regional Ecosystem	Tabooba AU5 - 12.8.14 Advanced Regrowth								
Site Reference	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	6	8	133.3	5	8	133.3	5	133.3	5
Native plant species richness - shrubs	6	9	150.0	5	7	116.7	5	133.3	5
Native plant species richness - grasses	8	9	112.5	5	9	112.5	5	112.5	5
Native plant species richness - forbs	21	27	128.6	5	48	228.6	5	178.6	5
Tree canopy height	22	12	54.5	5	10	45.5	5	50.0	5
Tree subcanopy height	11	6	54.5	5	5	45.5	5	50.0	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	9	54.5	5	7.5	45.5	5	50.0	5
Tree canopy cover (EDL)	10	44	275.0	3	40.5	253.1	3	264.1	3
Subcanopy cover	15	5	33.3	5	10.5	70.0	5	51.7	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	15.5	24.5	158.1	5	25.5	164.5	5	161.3	5
Shrub canopy cover	4	2	50.0	5	1	25.0	5	37.5	5
Native grass cover	58	29	50.0	3	16	27.6	5	38.8	3
Organic litter	30	1	3.3	5	6	20.0	5	11.7	5
Number of large trees (ha)	45	10	22.2	10	4	8.9	5	15.6	5
Coarse woody debris (m/ha)	336	176	52.4	5	146	43.5	5	47.9	5
Non-native plant cover	0	20		5	20		5	20.0	5
			Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.31	5		0.21	5	0.26	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			4	10		3	10	3.50	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			2	5		2	5	2.00	5
Site Condition Score				88			80		83
MAX Site Condition Score				*130*			*130*		*130*
Site Condition Score - out of 4									**2.55**
Site Context			Value	Score		Value	Score	Average	Average Score
Size of patch (ha)									
Remnant			1472.9			1472.9		1472.9	
Regrowth			343.5	10		343.5	10	343.5	10
Connectivity									
No. active GHFF camps within 20km			5	6		2	5	3.5	4
Context									
% GHFF foraging habitat within 20 km			32.2	4		31.9	4	32.1	4
Ecological Corridors				0			0		0
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			4	8		1	5	2.5	6
Absence of threats *				5			5		10
Site Context Score				37			27		34
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.82**

	Tabooba AU5 - 12.8.14 Advanced Regrowth								
	Benchmark	Site 736-737			Site 751-752			Average % benchmark	Average Score
Species Stocking Rate (SSR) **	12.8.14	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	45	10	22.2	6	4	8.9	4	15.6	4
Timing of GHFF Biological Resources				10			10		10
Species Stocking Rate Score				16.0			14.0		14.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.10**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced Regrowth**	**Tabooba AU2 RE 12.8.16 Young Regrowth**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced Regrowth**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.25	2.32	1.69	2.40	2.10	2.15	1.35	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES					19.80				
Size Weighting	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***6.48***	***0.00***	***0.00***	***0.00***	***6.48***

Table A7.16 **GREENRIDGE AU4 RE 12.3.20 REMNANT START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE:	**6**

Assessment Unit - Regional Ecosystem	Greenridge AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0		100	100.0		100	100		83.3	
Native plant species richness - trees	4	3	75.0	2.5		50.0	2.5	7	175		100.0	
Native plant species richness - shrubs	4	1	25.0	2.5		50.0	2.5	4	100		58.3	2.5
Native plant species richness - grasses	2	3	150.0			50.0	2.5	4	200		133.3	
Native plant species richness - forbs	8	4	50.0	2.5		75.0	2.5	5	62.5	2.5	62.5	2.5
Tree canopy height	16	18	112.5		15	93.8		25	156.25		120.8	
Tree subcanopy height	8	9	62.5		15	100.0		15	187.5		116.7	
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8		15	95.8		20	166.7		119.4	
Tree canopy cover (EDL)	70	99.5	142.1		73.6	105.1		83	118.6		122.0	
Subcanopy cover	20	15	75			40.0		34	170		72.5	
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2		40.6	90.2		58.5	130.0		111.0	
Shrub canopy cover	15	0.5	3.3			46.7		11	73.3		41.1	
Native grass cover	20	16.2	81.0		31.6	155.0		61.8	309		181.7	
Organic litter	30	47	156.7		38	126.7		30	100		127.8	
Number of large eucalypt trees (ha)	165	124	75.2	10	130	78.8	10	58	35.2		63.0	10
Coarse woody debris (m/ha)	890	266	29.9		315.0	35.4		165	18.5		27.7	
Non-native plant cover	0	1		10			10	5			2.0	10
			Value	Score		Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.29			0.44			0.44		0.39	
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			1.0			1.0			4	10	2	
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			1.0			1.0			5	10	1.7	
Site Condition Score				70.5			75			84.5		80.0
MAX Site Condition Score				*130*			*130*			*130*		*130.0*
Site Condition Score - out of 4												**2.5**
Site Context			**Value**	**Score**		**Value**	**Score**		**Value**	**Score**	**Average**	**Average score**
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
No. active GHFF camps within 20km			7.0			7.0			6		6.7	
Context												
% GHFF foraging habitat within 20 km			17.2			17.1			17.1		17.1	
Ecological Corridors												
Role of site location to species overall population in the state												
No. of active ≥ level three GHFF camps within a 20km			1.0			1.0			1		1.0	
Absence of threats										3.5		
Site Context Score				34			34			29.5		33.00
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3												**1.77**

	Greenridge AU4 - RE 12.3.20 Remnant											
	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	124.0	75.2	6.0	130	78.8	8.0	58	35.2		63.05	
Timing of GHFF Biological Resources				4.5			4.5			10		6.33
Species Stocking Rate Score				10.5			12.5			14.0		12.3
MAX Species Stocking Rate Score				*20*			*20*			*20*		*20*
SRR Score - out of 3												**1.85**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced Regrowth**	**Tabooba AU2 RE 12.8.16 Young Regrowth**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced Regrowth**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.32	2.18	2.28	2.31	2.2	2.46	2.18	0.5	2.05
Site Context Score (out of 3)	1.23	1.10	1.18	1.55	1.4	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.68	2.10	1.8	1.85	1.35	0.00	1.60
Habitat Quality score (out of 10)	5.54	5.30	4.99	5.96	5.44	*6.08*	5.55	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MINES						28.22		0.00	
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.08***	***0.00***	***0.00***	*6.08*

Table A7.17 **GREENRIDGE AU4 RE 12.3.20 REMNANT QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 6

Assessment Unit - Regional Ecosystem	Greenridge AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	3	100	100.0	3	100	100	3	83.3	3
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	2.5	1	50.0	2.5	4	200	2.5	133.3	2.5
Native plant species richness - forbs	8	4	50.0	0	6	75.0	2.5	5	62.5	2.5	62.5	2.5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	0	7	46.7	3	11	73.3	5	41.1	3
Native grass cover	20	16.2	81.0	3	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	3	38	126.7	3	30	100	5	127.8	3
Number of large trees (ha)	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	2	315.0	35.4	2	165	18.5	2	27.7	2
Non-native plant cover	0	1		5	0		5	5		5		5
			Value	Score		Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.3	5		0.4	5		0.4	5	0.4	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			1.0	5		1.0	5		4	10	2.0	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			1.0	5		1.0	5		3	10	1.7	5
Site Condition Score				58.5			66			83		68.5
MAX Site Condition Score				*130*			*130*			*130*		*130.0*
Site Condition Score - out of 4												**2.1**
Site Context			Value	Score		Value	Score		Value	Score	Average	Average Score
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
No. active GHFF camps within 20km			7.0	8		7.0	8		6	6	6.7	8
Context												
% GHFF foraging habitat within 20 km			17.2	2		17.1	2		17.1	2	17.1	2
Ecological Corridors				6			6			6		6
Role of site location to species overall population in the state												
No. of active ≥ level three GHFF camps within a 20km			1.0	2		1.0	2		1	2	1.0	2
Absence of threats				5			5			2.5		5
Site Context Score				33			33			28.5		33.0
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3												**1.77**

	Greenridge AU4 - RE 12.3.20 Remnant											
Species Stocking Rate (SSR)	Benchmark 12.3.20	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	124.0	75.2	8	130	78.8	8.0	58	35.2	8	63.05	8
Timing of GHFF Biological Resources				4.5			4.5			10		6.33
Species Stocking Rate Score				12.5			12.5			16.0		12.3
MAX Species Stocking Rate Score				*20*			*20*			*20*		*20*
SRR Score - out of 3												**1.85**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	*5.96*	*4.80*	*5.73*	*5.55*	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES						28.22			
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***5.73***	***0.00***	***0.00***	***5.73***

Table A7.18 **GREENRIDGE AU4 RE 12.3.20 REMNANT QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 7

Assessment Unit - Regional Ecosystem	Greenridge AU4 - RE 12.3.20 Remnant											
Site Reference	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition												
Recruitment of woody perennial species in EDL	100	50	50.0	5	100	100.0	5	100	100	5	83.3	5
Native plant species richness - trees	4	3	75.0	2.5	2	50.0	2.5	7	175	5	100.0	5
Native plant species richness - shrubs	4	1	25.0	2.5	2	50.0	2.5	4	100	5	58.3	2.5
Native plant species richness - grasses	2	3	150.0	5	1	50.0	5	4	200	5	133.3	5
Native plant species richness - forbs	8	4	50.0	2.5	6	75.0	2.5	5	62.5	5	62.5	5
Tree canopy height	16	18	112.5	5	15	93.8	5	25	156.25	5	120.8	5
Tree subcanopy height	8	5	62.5	5	8	100.0	5	15	187.5	5	116.7	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	11.5	95.8	5	11.5	95.8	5	20	166.7	5	119.4	5
Tree canopy cover (EDL)	70	99.5	142.1	5	73.6	105.1	5	83	118.6	5	122.0	5
Subcanopy cover	20	1.5	7.5	2	8	40.0	5	34	170	5	72.5	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	50.5	112.2	5	40.8	90.7	5	58.5	130.0	5	111.0	5
Shrub canopy cover	15	0.5	3.3	5	7	46.7	5	11	73.3	5	41.1	5
Native grass cover	20	16.2	81.0	5	31.0	155.0	5	61.8	309	5	181.7	5
Organic litter	30	47	156.7	5	38	126.7	5	30	100	5	127.8	5
Number of large trees (ha)	165	124	75.2	10	130	78.8	10	58	35.2	10	63.0	10
Coarse woody debris (m/ha)	890	260	29.2	5	315.0	35.4	5	165	18.5	5	27.7	5
Non-native plant cover	0	1		10	0		10	5		10	2.0	10
			Value	Score		Value	Score		Value	Score	Average	Average Score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.3	5		0.4	5		0.4	5	0.4	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			1.0	5		1.0	5		4	10	2.0	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			1.0	5		1.0	5		3	10	1.7	5
Site Condition Score				80.5			82.5			100		87.5
MAX Site Condition Score				*130*			*130*			*130*		*130.0*
Site Condition Score - out of 4												**2.7**
Site Context			Value	Score		Value	Score		Value	Score	Average	Average Score
Size of patch (ha)												
Remnant			781.3			781.3			781.3		781.3	
Regrowth			105.0	10		105.0	10		105.0	10	105.0	10
Connectivity												
No. active GHFF camps within 20km			7.0	8		7.0	8		6	6	6.7	8
Context												
% GHFF foraging habitat within 20 km			17.2	2		17.1	2		17.1	2	17.1	2
Ecological Corridors				6			6			6		6
Role of site location to species overall population in the state												
No. of active ≥ level three GHFF camps within a 20km			1.0	2		1.0	2		1	2	1.0	2
Absence of threats *				10			10			10		10
Site Context Score				38			38			36		38.0
MAX Site Context Score				*56*			*56*			*56*		*56*
Site Context Score - out of 3												**2.04**

	Greenridge AU4 - RE 12.3.20 Remnant											
	Benchmark	Site 931-932			Site 964-965			Site 966-967			Average % benchmark	Average Score
Species Stocking Rate (SSR) **	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	124.0	75.2	4.5	130	78.8	8.0	58	35.2	5	63.05	5
Timing of GHFF Biological Resources				4.5			4.5			10		6.33
Species Stocking Rate Score				12.5			12.5			16.0		14.3
MAX Species Stocking Rate Score				*20*			*20*			*20*		*20*
SRR Score - out of 3												**2.15**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES						28.22			
Size Weighting	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.88***	***0.00***	***0.00***	*6.88*

Table A7.19 **GREENRIDGE AU5 RE 12.3.20 REGROWTH START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 6

Assessment Unit - Regional Ecosystem	Greenridge AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	3	6	37.5	1	53.1	3
Tree subcanopy height	8	7	87.5	5	3	37.5	1	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	1	56.3	3
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	1	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	1	25.0	3
Native grass cover	20	9.2	46.0	1	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	3	14	46.7	1	165.3	5
Number of large eucalypt trees (ha)	165	8	4.8	5	10	6.1	1	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	9		5	10			7.5	5
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.11	2		0.44	1	0.28	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			4	5		2	1	1.5	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			1	5		2	1	1.5	5
Site Condition Score				64			66.5		71.0
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**2.2**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
No. active GHFF camps within 20km			9	10		8	5	8.5	10
Context									
% GHFF foraging habitat within 20 km			17.51	2		18	1	17.76	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			2	4		2	4	2	4
Absence of threats				5			5		5
Site Context Score				37			25		37.00
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.98**

	Greenridge AU5 - RE 12.3.20 Regrowth								
	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	8	4.8	2	10	6.1	2	5.5	2
Timing of GHFF Biological Resources				4.5			10		7.25
Species Stocking Rate Score				6.5			12.0		9.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.39**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	*6.08*	*5.55*	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES							4.74	0.00	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***5.55***	***0.00***	***5.55***

Table A7.20 **GREENRIDGE AU5 RE 12.3.20 REGROWTH QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 6

Assessment Unit - Regional Ecosystem	Greenridge AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	2.5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	3	53.1	5
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	3
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	2	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	3	2	13.3	1	25.0	3
Native grass cover	20	9.2	46.0	3	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	5	14	46.7	3	165.3	5
Number of large trees (ha)	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	5		3	10		1	7.5	3
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0.11	2		0.44	5	0.28	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			1	5		2	5	1.5	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			1	5		1	5	1.5	5
Site Condition Score				62			64.5		71.0
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**2.2**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
No. active GHFF camps within 20km			9	10		8	8	8.5	10
Context									
% GHFF foraging habitat within 20 km			17.51	2		18	2	17.76	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			2	4		2	4	2	4
Absence of threats				4			4		5
Site Context Score				36			24		37.00
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.98**

	Greenridge AU5 - RE 12.3.20 Regrowth								
	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	8	4.8	2	10	6.1	1	5.5	2
Timing of GHFF Biological Resources				4.5			10		7.25
Species Stocking Rate Score				6.5			12.0		9.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.39**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	5.78	4.48	1.27	5.96	4.80	5.73	5.55	1.71	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES							4.74		
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***5.55***	***0.00***	***5.55***

Table A7.21 **GREENRIDGE AU5 RE 12.3.20 REGROWTH QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 6

Assessment Unit - Regional Ecosystem	Greenridge AU5 - RE 12.3.20 Regrowth								
Site Reference	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	100	100.0	5	100	100.0	5	100.0	5
Native plant species richness - trees	4	8	200.0	5	4	100.0	5	150.0	5
Native plant species richness - shrubs	4	4	100.0	5	5	125.0	5	112.5	5
Native plant species richness - grasses	2	5	250.0	5	3	150.0	5	200.0	5
Native plant species richness - forbs	8	10	125.0	5	7	87.5	5	106.3	5
Tree canopy height	16	11	68.8	5	6	37.5	5	53.1	5
Tree subcanopy height	8	7	87.5	5	3	37.5	3	62.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	9	75.0	5	4.5	37.5	3	56.3	5
Tree canopy cover (EDL)	70	57	81.4	5	44.5	63.6	5	72.5	5
Subcanopy cover	20	22	110.0	5	3.5	17.5	3	63.8	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	39.5	87.8	5	24	53.3	5	70.6	5
Shrub canopy cover	15	5.5	36.7	5	2	13.3	5	25.0	5
Native grass cover	20	9.2	46.0	5	37	185.0	5	115.5	5
Organic litter	30	85.2	284.0	5	14	46.7	5	165.3	5
Number of large trees (ha)	165	8	4.8	5	10	6.1	5	5.5	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	5		10	10		10	7.5	10
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.11	2		0.44	5	0.28	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			1	5		2	5	1.5	5
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			1	5		2	5	1.5	5
Site Condition Score				82			83		85.0
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**2.6**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			654.84			0		327.4	
Regrowth			33.5	10		1.09	0	17.27	10
Connectivity									
No. active GHFF camps within 20km			9	10		8	8	8.5	10
Context									
% GHFF foraging habitat within 20 km			17.51	2		18	2	17.76	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			2	4		2	4	2	4
Absence of threats *				10			10		10
Site Context Score				42			30		42.00
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**2.25**

	Greenridge AU5 - RE 12.3.20 Regrowth								
	Benchmark	Site 974-975			Site 923-924			Average % benchmark	Average Score
Species Stocking Rate (SSR) **	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	8	4.8	2	10	6.1	2	5.5	2
Timing of GHFF Biological Resources				4.5			10		7.25
Species Stocking Rate Score				6.5			12.0		9.3
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**1.39**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES							4.74		
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.25***	***0.00***	***6.25***

Table A7.22 **GREENRIDGE AU6 RE 12.3.20 NON-REMNANT START QUALITY FOR GREY-HEADED FLYING-FOX**

START SCORE: 2

Assessment Unit - Regional Ecosystem	Greenridge AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100.0	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25.0	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	2	50.0	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50.0	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50.0	1	25.0	3
Tree subcanopy height	8	0	0.0	0	2	25.0	1	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	1	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	1	8.9	0
Subcanopy cover	20	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	1	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95.0	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Number of large eucalypt trees (ha)	165	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95		0	95.0	0
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0	0		0	0	0.0	0
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			0	0		0	0	0.0	0
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			0	0		0	0	0.0	0
Site Condition Score				7.5			30		16.5
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**0.5**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			0			0		0.0	
Regrowth			0	0		0	0	0.0	0
Connectivity									
No. active GHFF camps within 20km			9	10		6	6	7.5	8
Context									
% GHFF foraging habitat within 20 km			17.43	2		15.81	1	16.62	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		1	2	2	4
Absence of threats				4			4		5
Site Context Score				28			20		25.00
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.34**

	Greenridge AU6 - RE 12.3.20 Non-remnant								
	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
Species Stocking Rate (SSR)	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	0.0	0.0	0.0	0	0.0	0.0	0.00	0
Timing of GHFF Biological Resources				0			0		0.00
Species Stocking Rate Score				0.0			0.0		0.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**0.00**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.32	2.18	2.20	2.31	2.22	2.46	2.18	0.51	2.05
Site Context Score (out of 3)	1.23	1.10	1.10	1.55	1.42	1.77	1.98	1.34	1.44
Species Stocking Rate Score (out of 3)	1.99	2.02	1.69	2.10	1.80	1.85	1.39	0.00	1.60
Habitat Quality score (out of 10)	*5.54*	*5.30*	*4.99*	*5.96*	*5.44*	*6.08*	*5.55*	*1.85*	5.09
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								12.48	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***1.85***	***1.85***

Table A7.23 **GREENRIDGE AU6 RE 12.3.20 NON-REMNANT QUALITY WITHOUT OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITHOUT OFFSET: 2

Assessment Unit - Regional Ecosystem	Greenridge AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	0	100	100.0	5	50.0	3
Native plant species richness - trees	4	0	0.0	0	1	25.0	2.5	12.5	0
Native plant species richness - shrubs	4	0	0.0	0	2	50.0	2.5	25.0	2.5
Native plant species richness - grasses	2	0	0.0	0	1	50.0	2.5	25.0	2.5
Native plant species richness - forbs	8	3	37.5	2.5	5	62.5	2.5	50.0	2.5
Tree canopy height	16	0	0.0	0	8	50.0	3	25.0	3
Tree subcanopy height	8	0	0.0	0	2	25.0	3	12.5	0
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	0	5	41.7	3	20.8	0
Tree canopy cover (EDL)	70	0	0.0	0	12.5	17.9	1	8.9	0
Subcanopy cover	20	0	0.0	0	0	0.0	0	0.0	0
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	0	6.25	13.9	1	6.9	0
Shrub canopy cover	15	0	0.0	0	1	6.7	0	3.3	0
Native grass cover	20	0	0.0	0	19	95.0	5	47.5	1
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Number of large trees (ha)	165	0	0.0	0	0	0.0	0	0.0	0
Coarse woody debris (m/ha)	890	0	0.0	0	0	0.0	0	0.0	0
Non-native plant cover	0	95		0	95		0	95.0	0
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores			0	0		0	0	0.0	0
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness			0	0		0	0	0.0	0
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness			0	0		0	0	0.0	0
Site Condition Score				7.5			30		16.5
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**0.5**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			0			0		0.0	
Regrowth			0	0		0	0	0.0	0
Connectivity									
No. active GHFF camps within 20km			9	10		6	6	7.5	8
Context									
% GHFF foraging habitat within 20 km			17.43	2		15.81	2	16.62	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		1	2	2	4
Absence of threats				3.5			3.5		2.5
Site Context Score				27.5			19.5		22.50
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**1.21**

	Greenridge AU6 - RE 12.3.20 Non-remnant								
Species Stocking Rate (SSR)	Benchmark 12.3.20	Site 972-973 Raw Data	% Benchmark	Score	Site 960-961 Raw Data	% Benchmark	Score	Average % benchmark	Average Score
Abundance of large trees	165	0.0	0.0	0.0	0	0.0	0.0	0.00	0
Timing of GHFF Biological Resources				0			0		0.00
Species Stocking Rate Score				0.0			0.0		0.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**0.00**

Final habitat quality score (weighted)	**Tabooba AU1 RE 12.8.16 Remnant**	**Tabooba AU2 RE 12.8.16 Advanced Regrowth**	**Tabooba AU2 RE 12.8.16 Young Regrowth**	**Tabooba AU4 RE 12.8.14 Remnant**	**Tabooba AU5 RE 12.8.14 Advanced Regrowth**	**Greenridge AU4 RE 12.3.20 Remnant**	**Greenridge AU5 RE 12.3.20 Regrowth**	**Greenridge AU6 RE 12.3.20 Non-remnant**	**Average/ Final**
Site Condition score (out of 4)	2.26	1.66	0.31	2.31	1.58	2.11	2.18	0.51	1.62
Site Context Score (out of 3)	1.23	1.10	0.96	1.55	1.42	1.77	1.98	1.21	1.40
Species Stocking Rate Score (out of 3)	2.29	1.72	0.00	2.10	1.80	1.85	1.39	0.00	1.39
Habitat Quality score (out of 10)	*5.78*	*4.48*	*1.27*	5.96	*4.80*	5.73	5.55	*1.71*	4.41
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								12.48	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***1.71***	***1.71***

Table A7.24 **GREENRIDGE AU6 RE 12.3.20 NON-REMNANT QUALITY WITH OFFSET FOR GREY-HEADED FLYING-FOX**

SCORE WITH OFFSET: 7

Assessment Unit - Regional Ecosystem	Greenridge AU6 - RE 12.3.20 Non-remnant								
Site Reference	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Site Condition									
Recruitment of woody perennial species in EDL	100	0	0.0	5	100	100.0	5	50.0	5
Native plant species richness - trees	4	0	0.0	5	1	25.0	5	12.5	5
Native plant species richness - shrubs	4	0	0.0	5	2	50.0	5	25.0	5
Native plant species richness - grasses	2	0	0.0	5	1	50.0	5	25.0	5
Native plant species richness - forbs	8	3	37.5	5	5	62.5	5	50.0	5
Tree canopy height	16	0	0.0	5	8	50.0	5	25.0	5
Tree subcanopy height	8	0	0.0	5	2	25.0	5	12.5	5
Tree canopy height (average of emergent, canopy, sub-canopy)	12	0	0.0	5	5	41.7	5	20.8	5
Tree canopy cover (EDL)	70	0	0.0	5	12.5	17.9	5	8.9	5
Subcanopy cover	20	0	0.0	5	0	0.0	5	0.0	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	45	0	0.0	5	6.25	13.9	5	6.9	5
Shrub canopy cover	15	0	0.0	5	1	6.7	5	3.3	5
Native grass cover	20	0	0.0	5	19	95.0	5	47.5	5
Organic litter	30	20.8	69.3	5	20	66.7	5	68.0	5
Number of large trees (ha)	165	0	0.0	5	0	0.0	5	0.0	5
Coarse woody debris (m/ha)	890	0	0.0	5	0	0.0	5	0.0	5
Non-native plant cover	0	95		10	95	0.0	10	95.0	10
			Value	Score		Value	Score	Average	Average score
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Flower Scores (/10)			0.26	5		0.26	5	0.26	5
Quality and availability of GHFF Habitat: Foraging Habitat Tree Species Richness (/20)			4	10		4	10	4	10
Quality and availability of GHFF Habitat: Significant Foraging Habitat Tree Species Richness (/20)			3	10		3	10	3	10
Site Condition Score				95			95		95.0
MAX Site Condition Score				*130*			*130*		*130.0*
Site Condition Score - out of 4									**2.9**
Site Context			Value	Score		Value	Score	Average	Average score
Size of patch (ha)									
Remnant			19.75			654.84		337.3	
Regrowth			22.02	0		34.02	0	28.0	10
Connectivity									
No. active GHFF camps within 20km			9	10		6	6	7.5	8
Context									
% GHFF foraging habitat within 20 km			17.43	2		15.81	2	16.62	2
Ecological Corridors				6			6		6
Role of site location to species overall population in the state									
No. of active ≥ level three GHFF camps within a 20km			3	6		1	2	2	4
Absence of threats *				9			9		10
Site Context Score				33			25		40.00
MAX Site Context Score				*56*			*56*		*56*
Site Context Score - out of 3									**2.14**

	Greenridge AU6 - RE 12.3.20 Non-remnant								
	Benchmark	Site 972-973			Site 960-961			Average % benchmark	Average Score
Species Stocking Rate (SSR) **	12.3.20	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score		
Abundance of large trees	165	0.0	0.0	0.0	0	0.0	0.0	0.00	4
Timing of GHFF Biological Resources				10			10		10.00
Species Stocking Rate Score				10.0			10.0		14.0
MAX Species Stocking Rate Score				*20*			*20*		*20*
SRR Score - out of 3									**2.10**

Final habitat quality score (weighted)	Tabooba AU1 RE 12.8.16 Remnant	Tabooba AU2 RE 12.8.16 Advanced Regrowth	Tabooba AU2 RE 12.8.16 Young Regrowth	Tabooba AU4 RE 12.8.14 Remnant	Tabooba AU5 RE 12.8.14 Advanced Regrowth	Greenridge AU4 RE 12.3.20 Remnant	Greenridge AU5 RE 12.3.20 Regrowth	Greenridge AU6 RE 12.3.20 Non-remnant	Average/ Final
Site Condition score (out of 4)	2.69	2.77	2.63	2.46	2.55	2.69	2.62	2.92	2.67
Site Context Score (out of 3)	1.50	1.50	1.50	1.82	1.82	2.04	2.25	2.14	1.82
Species Stocking Rate Score (out of 3)	2.29	2.32	1.69	2.40	2.10	2.15	1.39	2.10	2.05
Habitat Quality score (out of 10)	*6.48*	*6.58*	*5.82*	*6.68*	*6.48*	*6.88*	*6.25*	*7.17*	6.54
Assessment Unit area in the offset area (ha)	49.80	145.02	48.1	50.62	19.80	28.22	4.74	12.48	*358.82*
Total offset area (ha) for this MNES								12.48	
Size Weighting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	
Weighted Habitat Quality Score	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***7.17***	***7.17***

Appendix M: Offset Assessment Guide outputs – Coastal swamp oak TEC

TABLE 10.2 Greenridge AU1 OAG

Offsets Assessment Guide

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

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenridge AU1	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	14.2	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.14	100%	0.14	0.11	Overall net present value	2.22	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	8	Future quality without offset *(scale of 0-10)*	7	Future quality with offset *(scale of 0-10)*	9	2.00	85%	1.70	1.51	% of impact offset	17.47%	
								Future area without offset	14.1	Future area with offset	14.2			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.3 Greenridge AU2 OAG

Offsets Assessment Guide

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

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenridge AU2	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	5.16	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.05	100%	0.05	0.04	Overall net present value	0.72	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	7	Future quality without offset *(scale of 0-10)*	7	Future quality with offset *(scale of 0-10)*	9	2.00	85%	1.70	1.34	% of impact offset	5.67%	
								Future area without offset	5.1	Future area with offset	5.2					Minimum (90%) direct offset requirement met?	FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0					Minimum (90%) direct offset requirement met?	FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenridge AU3	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	21.97	Risk of loss without offset *(%)*	0%	Risk of loss with offset *(%)*	0%	0.00	100%	0.00	0.00	Overall net present value	4.41	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	3	Future quality without offset *(scale of 0-10)*	3	Future quality with offset *(scale of 0-10)*	6	3.00	85%	2.55	2.01	% of impact offset	34.70%	
								Future area without offset	22.0	Future area with offset	22.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

					Cost ($)		
Protected matter attributes	Quantum of impact	Net present value	% of impact offset	Direct offset adequate?	Direct offset	Other compensatory measures	Total
Birth rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Mortality rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of individuals	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of features	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Condition of habitat	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Area of habitat		0.00	0.00	FALSE	0.00	N/A	0.00
Area of community	12.72	4.41	0.35	FALSE	0.00	#DIV/0!	#DIV/0!
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 19
2 October 2012

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenridge AU4	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	28.19	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.28	100%	0.28	0.22	Overall net present value	4.41	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	8	Future quality without offset *(scale of 0-10)*	7	Future quality with offset *(scale of 0-10)*	9	2.00	85%	1.70	1.51	% of impact offset	34.68%	
								Future area without offset	27.9	Future area with offset	28.2			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

Protected matter attributes	Quantum of impact	Net present value	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset	Other compensatory measures	Total
Birth rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Mortality rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of individuals	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of features	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Condition of habitat	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Area of habitat		0.00	0.00	FALSE	0.00	N/A	0.00
Area of community	12.72	4.41	0.35	FALSE	0.00	#DIV/0!	#DIV/0!
					$0.00	**#DIV/0!**	**#DIV/0!**

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenrdige AU5	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	4.74	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.05	100%	0.05	0.04	Overall net present value	0.66	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	7	Future quality without offset *(scale of 0-10)*	7	Future quality with offset *(scale of 0-10)*	9	2.00	85%	1.70	1.34	% of impact offset	5.20%	
								Future area without offset	4.7	Future area with offset	4.7			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

Protected matter attributes	Quantum of impact	Net present value	% of impact offset	Direct offset adequate?	Cost ($) Direct offset	Cost ($) Other compensatory measures	Cost ($) Total
Birth rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Mortality rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of individuals	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of features	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Condition of habitat	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Area of habitat		0.00	0.00	FALSE	0.00	N/A	0.00
Area of community	12.72	0.66	0.05	FALSE	0.00	#DIV/0!	#DIV/0!
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 19
2 October 2012

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

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*	15.9	
			Quality *(Scale 0-10)*	8	
		Total quantum of impact *(Adjusted Hectares)*		12.72	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	No		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*			

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	No			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	12.72	Greenridge AU6	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	12.47	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.12	100%	0.12	0.10	Overall net present value	5.87	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	2	Future quality without offset *(scale of 0-10)*	2	Future quality with offset *(scale of 0-10)*	9	7.00	85%	5.95	4.69	% of impact offset	46.19%	
								Future area without offset	12.3	Future area with offset	12.5			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

					Cost ($)		
Protected matter attributes	**Quantum of impact**	**Net present value**	**% of impact offset**	**Direct offset adequate?**	**Direct offset**	**Other compensatory measures**	**Total**
Birth rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Mortality rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of individuals	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of features	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Condition of habitat	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Area of habitat		0.00	0.00	FALSE	0.00	N/A	0.00
Area of community	12.72	5.87	0.46	FALSE	0.00	#DIV/0!	#DIV/0!
					$0.00	**#DIV/0!**	**#DIV/0!**

Appendix N: Offset Assessment Guide outputs – Koala habitat

TABLE 10.9 Tabooba AU1 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	No			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Tabooba AU1	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	49.8	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.50	100%	0.50	0.48	Overall net present value	4.54	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	8	Future quality without offset *(scale of 0-10)*	8	Future quality with offset *(scale of 0-10)*	9	1.00	85%	0.85	0.83	% of impact offset	8.78%	
								Future area without offset	49.3	Future area with offset	49.8			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.10 Tabooba AU2 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Tabooba AU2	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	145.02	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	1.45	100%	1.45	1.39	Overall net present value	25.04	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	6	Future quality without offset *(scale of 0-10)*	6	Future quality with offset *(scale of 0-10)*	8	2.00	85%	1.70	1.67	% of impact offset	48.46%	
								Future area without offset	143.6	Future area with offset	145.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.11 Tabooba AU3 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	No			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Tabooba AU3	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	48.1	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.48	100%	0.48	0.46	Overall net present value	15.88	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	4	Future quality without offset *(scale of 0-10)*	3	Future quality with offset *(scale of 0-10)*	7	4.00	85%	3.40	3.27	% of impact offset	30.73%	
								Future area without offset	47.6	Future area with offset	48.1			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.12 Tabooba AU4 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	No			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Tabooba AU4	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	50.62	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.51	100%	0.51	0.49	Overall net present value	0.39	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	8	Future quality without offset *(scale of 0-10)*	8	Future quality with offset *(scale of 0-10)*	8	0.00	85%	0.00	0.00	% of impact offset	0.75%	
								Future area without offset	50.1	Future area with offset	50.6			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	No							0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.13 Tabooba AU5 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Tabooba AU5	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	19.8	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.20	100%	0.20	0.19	Overall net present value	3.42	
				Time until ecological benefit	10	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	85%	1.70	1.67	% of impact offset	6.62%	
								Future area without offset	19.6	Future area with offset	19.8			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Greenridge AU4	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	28.2	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.28	100%	0.28	0.27	Overall net present value	0.22	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	8	Future quality without offset *(scale of 0-10)*	8	Future quality with offset *(scale of 0-10)*	8	0.00	85%	0.00	0.00	% of impact offset	0.42%	
								Future area without offset	27.9	Future area with offset	28.2			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

	Cost ($)

Offsets Assessment Guide

For use in determining offsets under the Environment Protection and Biodiversity Conservation Act 19
2 October 2012

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Greenridge AU5	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	4.74	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.05	100%	0.05	0.05	Overall net present value	0.81	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	7	Future quality without offset *(scale of 0-10)*	7	Future quality with offset *(scale of 0-10)*	9	2.00	85%	1.70	1.63	% of impact offset	1.56%	
								Future area without offset	4.7	Future area with offset	4.7			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

					Cost ($)		
Protected matter attributes	**Quantum of impact**	**Net present value**	**% of impact offset**	**Direct offset adequate?**	**Direct offset**	**Other compensatory measures**	**Total**
Birth rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Mortality rate	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of individuals	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Number of features	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Condition of habitat	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
Area of habitat	51.67	0.81	0.02	FALSE	0.00	#DIV/0!	#DIV/0!
Area of community	0.00	0.00	0.00	FALSE	0.00	N/A	0.00
					$0.00	**#DIV/0!**	**#DIV/0!**

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	73.81	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		51.67	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	51.67	Greenridge AU6	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	12.47	Risk of loss without offset *(%)*	0%	Risk of loss with offset *(%)*	0%	0.00	100%	0.00	0.00	Overall net present value	3.06	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	4	Future quality without offset *(scale of 0-10)*	4	Future quality with offset *(scale of 0-10)*	7	3.00	85%	2.55	2.45	% of impact offset	5.91%	
								Future area without offset	12.5	Future area with offset	12.5			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Summary

	Cost ($)

Appendix O: Offset Assessment Guide outputs – GHFF habitat

TABLE 10.18 Tabooba AU1 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	No			Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	48.13	Tabooba AU1	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	49.8	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.50	100%	0.50	0.48	Overall net present value	0.29	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	6	Future quality without offset *(scale of 0-10)*	6	Future quality with offset *(scale of 0-10)*	6	0.00	85%	0.00	0.00	% of impact offset	0.60%	
								Future area without offset	49.3	Future area with offset	49.8			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.19 Tabooba AU2 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	48.13	Tabooba AU2	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	145.02	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	1.45	100%	1.45	1.39	Overall net present value	36.86	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	5	Future quality without offset *(scale of 0-10)*	4	Future quality with offset *(scale of 0-10)*	7	3.00	85%	2.55	2.50	% of impact offset	76.58%	
								Future area without offset	143.6	Future area with offset	145.0			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.20 Tabooba AU3 OAG

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	48.13	Tabooba AU3	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	48.1	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.48	100%	0.48	0.46	Overall net present value	19.72	
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	5	Future quality without offset *(scale of 0-10)*	1	Future quality with offset *(scale of 0-10)*	6	5.00	85%	4.25	4.08	% of impact offset	40.98%	
								Future area without offset	47.6	Future area with offset	48.1			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.21 Tabooba AU21

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	48.13	Tabooba AU4	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	50.62	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.51	100%	0.51	0.49	Overall net present value	4.52	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	6	Future quality without offset *(scale of 0-10)*	6	Future quality with offset *(scale of 0-10)*	7	1.00	85%	0.85	0.83	% of impact offset	9.38%	
								Future area without offset	50.1	Future area with offset	50.6			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

TABLE 10.22 Tabooba AU22

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees	Yes			
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00	
				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)*		0.00		0.00	0.00	% of impact offset	0.00%	
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result		Cost *($ total)*
Area of habitat	Yes	48.13	Tabooba AU5	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	19.8	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.20	100%	0.20	0.19	Overall net present value	1.75	
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	5	Future quality without offset *(scale of 0-10)*	5	Future quality with offset *(scale of 0-10)*	6	1.00	85%	0.85	0.83	% of impact offset	3.63%	
								Future area without offset	19.6	Future area with offset	19.8			Minimum (90%) direct offset requirement met?			FALSE	

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Number of features e.g. Nest hollows, habitat trees	Yes	0.00						0.00		0.00	0.00	0.00%	FALSE	
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE	

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?	Cost *($ total)*
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE	
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE	
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE	

Offsets Assessment Guide

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

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees				
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00
				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)*		0.00		0.00	0.00	% of impact offset	0.00%
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of habitat	Yes	48.13	Greenridge AU4	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	28.22	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.28	100%	0.28	0.27	Overall net present value	2.52
				Time until ecological benefit	10	Start quality *(scale of 0-10)*	6	Future quality without offset *(scale of 0-10)*	6	Future quality with offset *(scale of 0-10)*	7	1.00	85%	0.85	0.83	% of impact offset	5.23%
								Future area without offset	27.9	Future area with offset	28.2			Minimum (90%) direct offset requirement met?			FALSE

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE

Offsets Assessment Guide

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2 October 2012

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees				
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00
				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)*		0.00		0.00	0.00	% of impact offset	0.00%
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of habitat	Yes	48.13	Greenridge AU5	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	4.74	Risk of loss without offset *(%)*	1%	Risk of loss with offset *(%)*	0%	0.05	100%	0.05	0.05	Overall net present value	0.03
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	6	Future quality without offset *(scale of 0-10)*	6	Future quality with offset *(scale of 0-10)*	6	0.00	85%	0.00	0.00	% of impact offset	0.06%
								Future area without offset	4.7	Future area with offset	4.7			Minimum (90%) direct offset requirement met?			FALSE

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE

Offsets Assessment Guide

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2 October 2012

Matter of National Environmental Significance	
Name	Grey-headed flying-fox
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Ecological communities

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of community	Yes		Area *(Hectares)*		
			Quality *(Scale 0-10)*		
		Total quantum of impact *(Adjusted Hectares)*		0.00	

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Information source
Area of habitat	Yes		Area *(Hectares)*	68.76	
			Quality *(Scale 0-10)*	7	
		Total quantum of impact *(Adjusted Hectares)*		48.13	

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Number of features e.g. Nest hollows, habitat trees				
Condition of habitat Change in habitat condition, but no change in extent	No			

Threatened species

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact	Information source
Birth rate e.g. Change in nest success	No			
Mortality rate e.g Change in number of road kills per year	No			
Number of individuals e.g. Individual plants/animals	No			

Offset calculator

Ecological Communities

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of community	Yes	0.00		Risk-related time horizon *(max. 20 years)*		Start area *(hectares)*		Risk of loss without offset *(%)*		Risk of loss with offset *(%)*		0.00		0.00	0.00	Overall net present value	0.00
				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)*		0.00		0.00	0.00	% of impact offset	0.00%
								Future area without offset	0.0	Future area with offset	0.0			Minimum (90%) direct offset requirement met?			FALSE

Threatened species habitat

Protected matter attributes	Attribute relevant to case?	Total quantum of impact *(Adjusted Hectares)*	Proposed offset	Time Horizon *(Years)*		Start area and quality		Future area and quality without offset *(adjusted hectares)*		Future area and quality with offset *(adjusted hectares)*		Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value *(adjusted hectares)*	Offset Result	
Area of habitat	Yes	48.13	Greenridge AU6	Risk-related time horizon *(max. 20 years)*	20	Start area *(hectares)*	12.48	Risk of loss without offset *(%)*	0%	Risk of loss with offset *(%)*	0%	0.00	100%	0.00	0.00	Overall net present value	5.10
				Time until ecological benefit	20	Start quality *(scale of 0-10)*	2	Future quality without offset *(scale of 0-10)*	2	Future quality with offset *(scale of 0-10)*	7	5.00	85%	4.25	4.08	% of impact offset	10.59%
								Future area without offset	12.5	Future area with offset	12.5			Minimum (90%) direct offset requirement met?			FALSE

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Number of features e.g. Nest hollows, habitat trees	Yes							0.00		0.00	0.00	0.00%	FALSE
Condition of habitat Change in habitat condition, but no change in extent	No							0.00		0.00	0.00	0.00%	FALSE

Threatened species

Protected matter attributes	Attribute relevant to case?	Quantum of impact	Proposed offset	Time horizon *(years)*	Start Value	Future value without offset	Future value with offset	Raw gain	Confidence in result *(%)*	Adjusted gain	Net present value	% of impact offset	Minimum (90%) direct offset requirement met?
Birth rate e.g. Change in nest success	No							0.00		0.00	0.00	0.00%	FALSE
Mortality rate e.g Change in number of road kills per year	No							0.00		0.00	0.00	0.00%	FALSE
Number of individuals e.g. Individual plants/animals	No							0.00		0.00	0.00	0.00%	FALSE