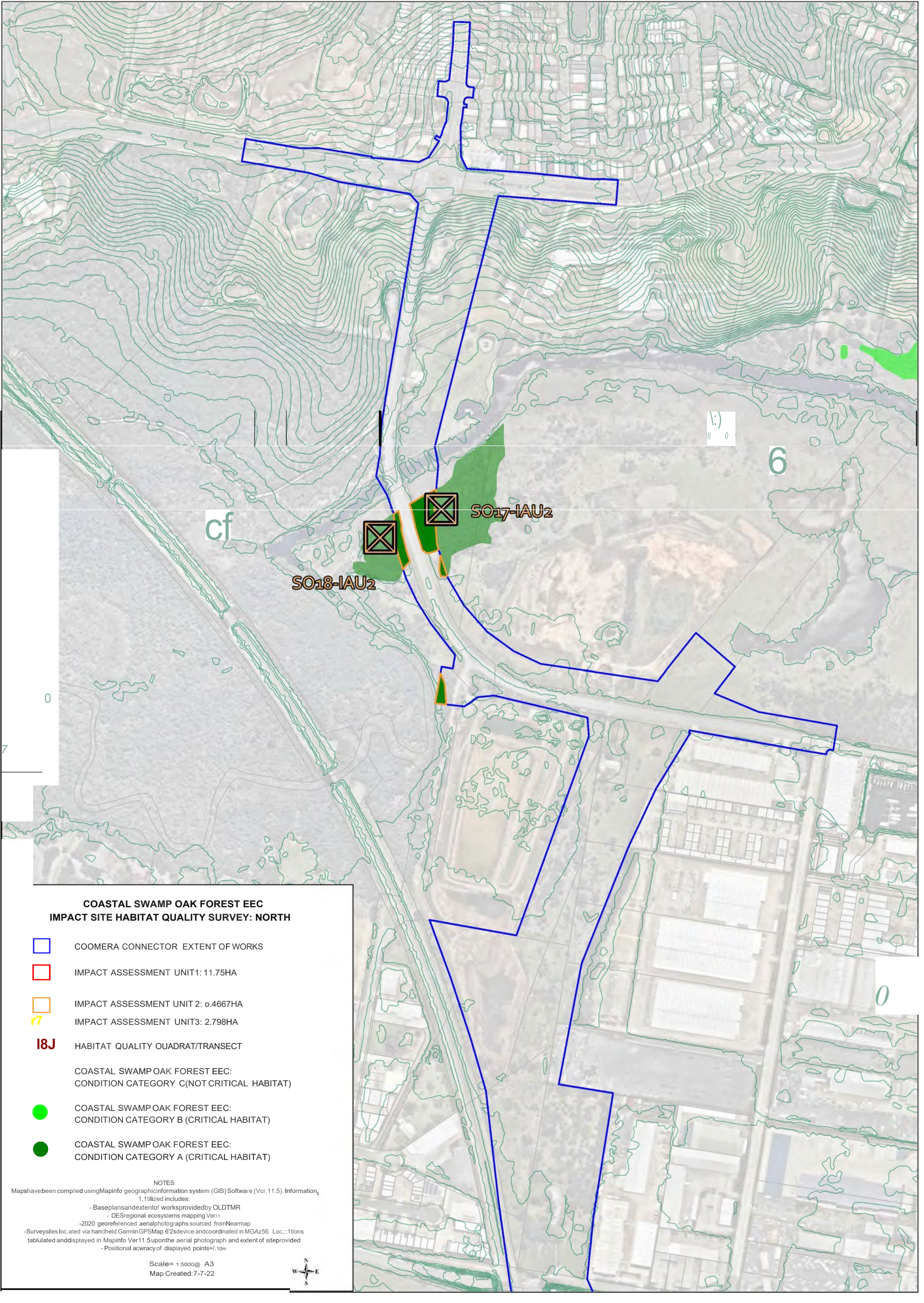


Appendix E: Impact Site Survey Data

Appendix E1: Coastal Swamp Oak TEC



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

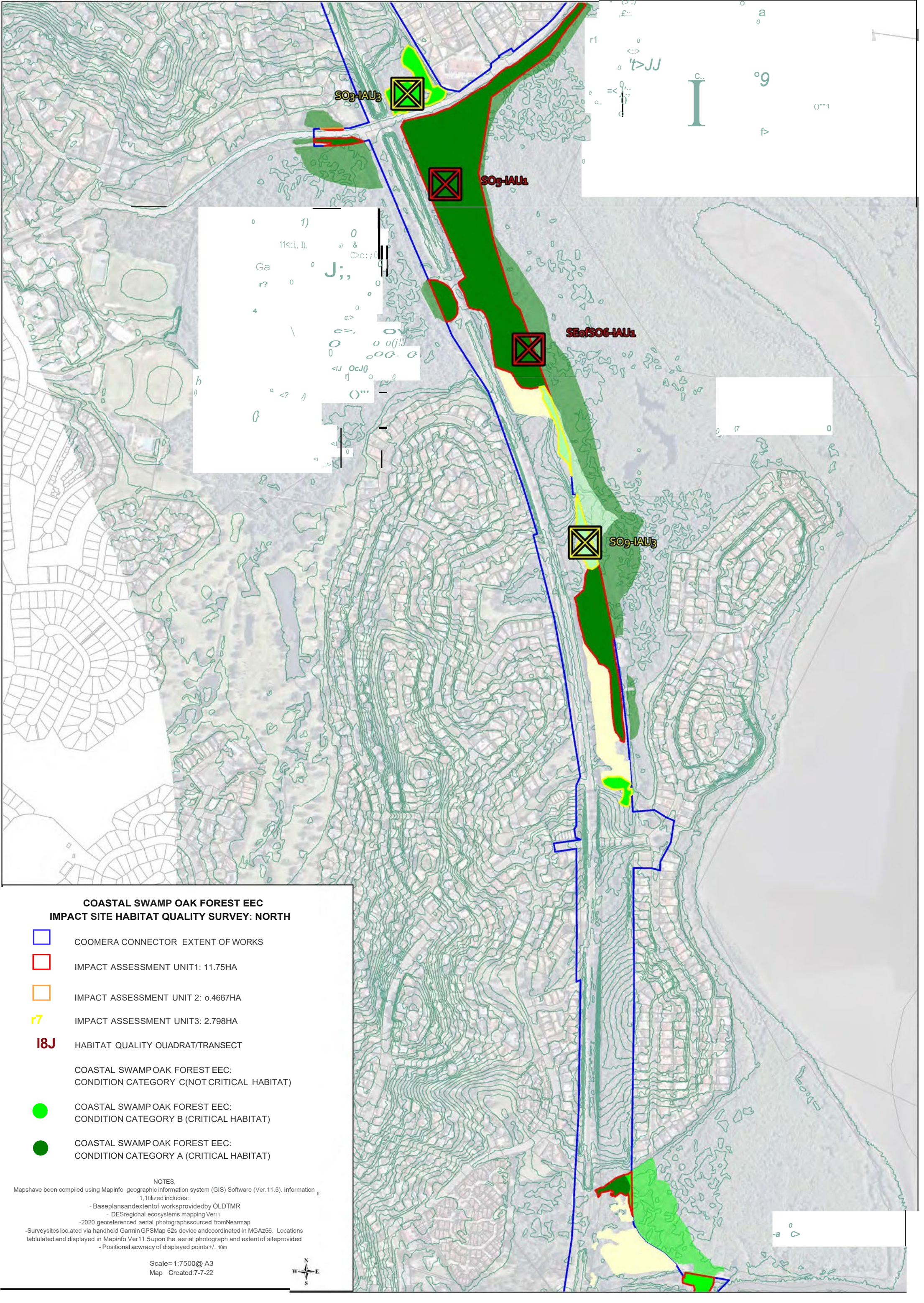
-  COOMERA CONNECTOR EXTENT OF WORKS
-  IMPACT ASSESSMENT UNIT1: 11.75HA
-  IMPACT ASSESSMENT UNIT2: 0.4667HA
-  IMPACT ASSESSMENT UNIT3: 2.798HA
-  HABITAT QUALITY QUADRAT/TRANSECT
-  COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY C (NOT CRITICAL HABITAT)
-  COASTAL SWAMP OAK FOREST EEC:
CONDITION 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, 1,1 utilized includes:
- Baseplansandextentof worksprovidedby OLD TMR
- DESregional ecosystems mapping Ver11
- 2020 georeferenced aerialphotographs sourced fromNearemap
- Surveysites located via handheld Garmin GPSMap 62sdevice andcoordinated in MGAz56. Loc,::1 tions
tabulated anddisplayed in Mapinfo Ver11.5 uponthe aerial photograph and extent of siteprovided
- Positional acwrcy of displayed points+/- 10m

Scale= 1:5000@ A3
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: 6.4667HA
-  IMPACT ASSESSMENT UNIT3: 2.798HA
-  HABITAT QUALITY QUADRAT/TRANSECT

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

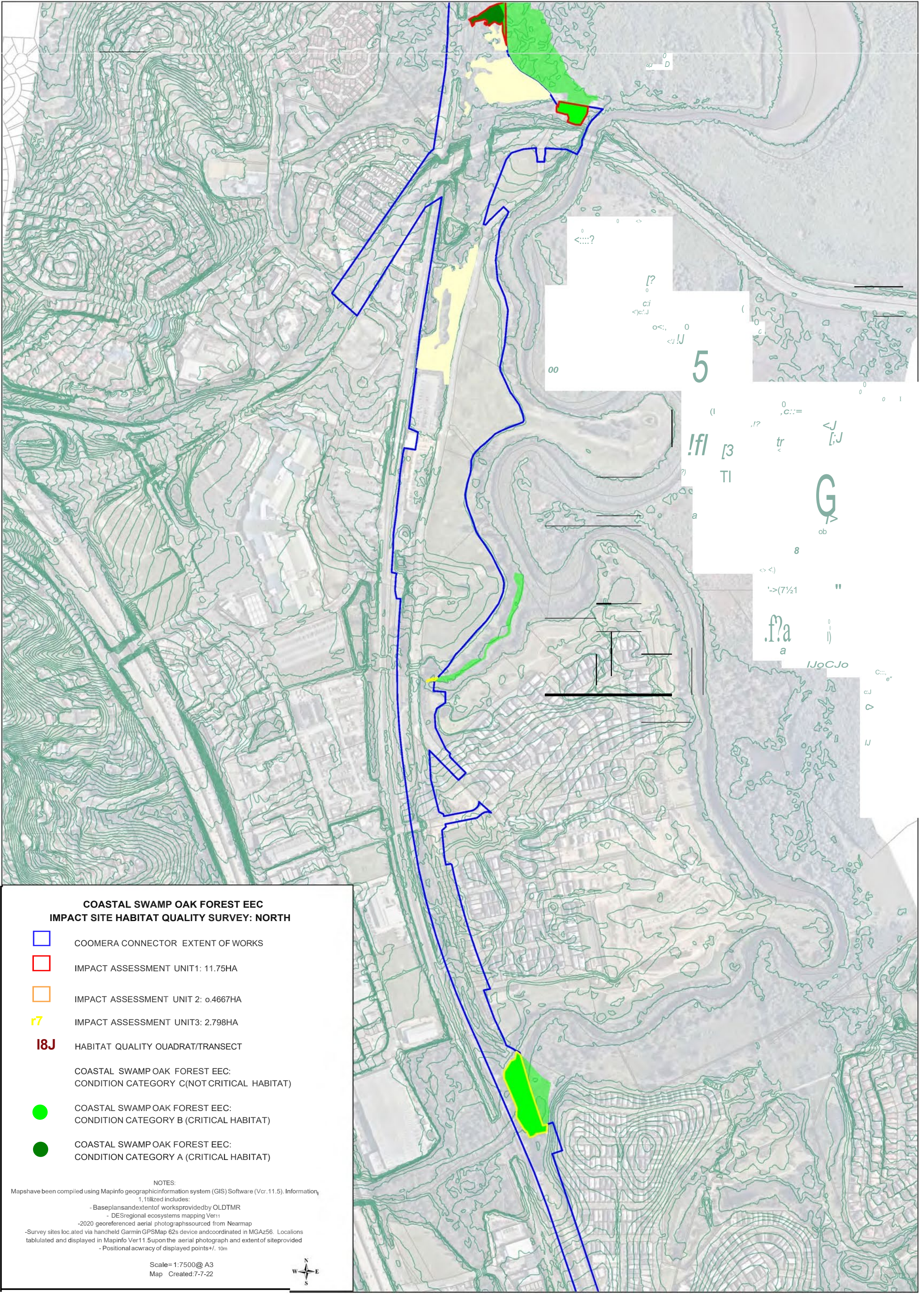
 COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY B (CRITICAL HABITAT)

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

NOTES:
Map have been compiled using Mapinfo geographic information system (GIS) Software (Ver.11.5). Information utilized includes:
- Base plans and extent of works provided by OLD TMR
- DES regional ecosystems mapping Ver 11
- 2020 georeferenced aerial photographs sourced from Neamap
- Survey sites located via handheld Garmin GPSMap 62s device and coordinated in MGAz56. Locations tabulated and displayed in Mapinfo Ver 11.5 upon the aerial photograph and extent of site provided
- Positional accuracy of displayed points +/- 10m

Scale= 1:7500@ A3
Map Created: 7-7-22





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

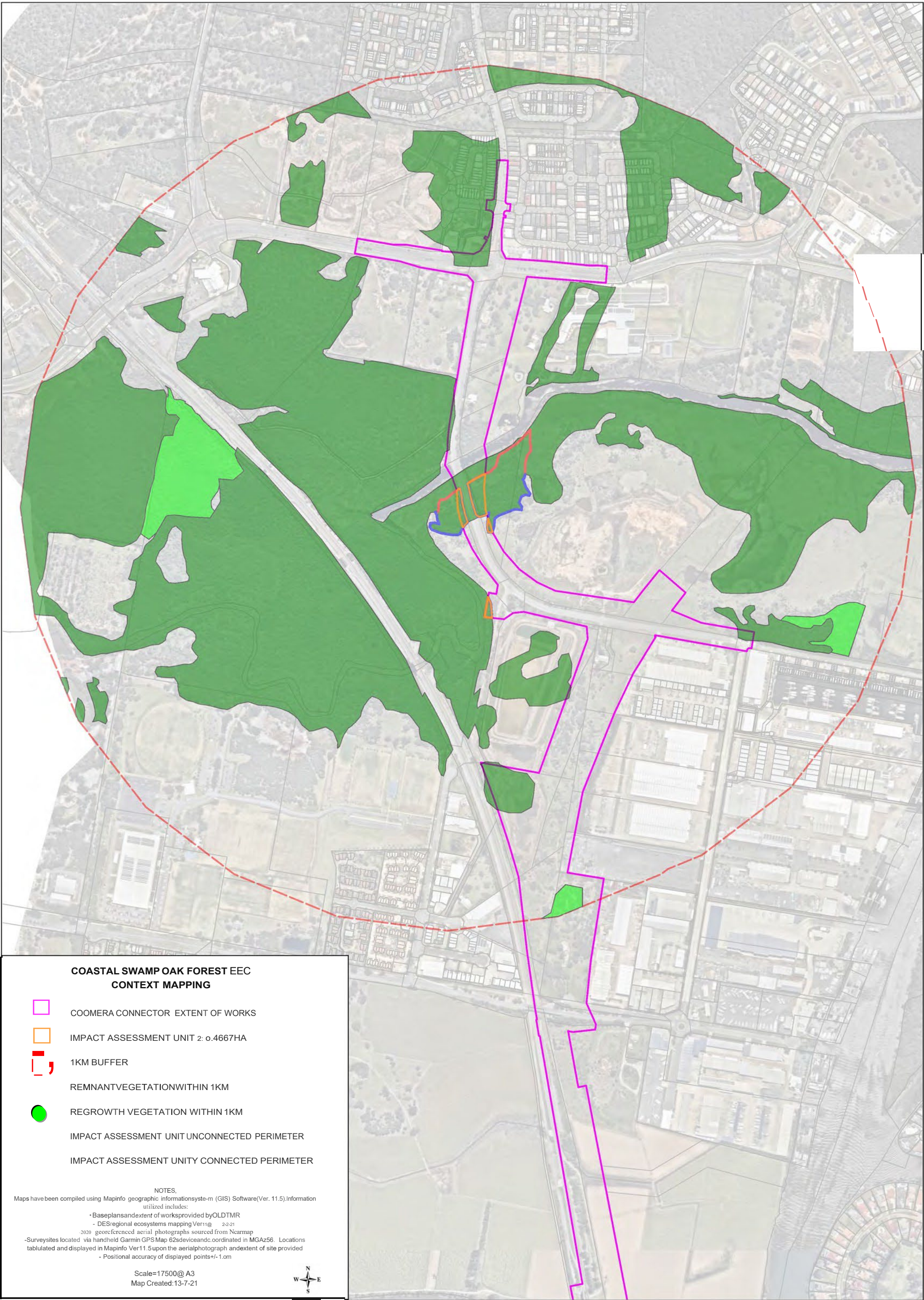
-  COOMERA CONNECTOR EXTENT OF WORKS
-  IMPACT ASSESSMENT UNIT1: 11.75HA
-  IMPACT ASSESSMENT UNIT 2: 0.4667HA
-  IMPACT ASSESSMENT UNIT3: 2.798HA
-  HABITAT QUALITY QUADRAT/TRANSECT
-  COASTAL SWAMP OAK FOREST EEC:
CONDITION CATEGORY C (NOT CRITICAL HABITAT)
-  COASTAL SWAMP OAK FOREST EEC:
CONDITION 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 OLD TMR
- DESregional ecosystems mapping Ver11
- 2020 georeferenced aerial photographssourced from Neamap
- Survey sites loc.ated via handheld Garmin GPSMap 62s device andcoordinated in MGAz56. Localions tabulated and displayed in Mapinfo Ver11.5upon the aerial photograph and extent of siteprovided
- Positional acvracy of displayed points+/- 10m

Scale= 1:7500@ A3
Map Created:7-7-22





**COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING**

-  COOMERA CONNECTOR EXTENT OF WORKS
-  IMPACT ASSESSMENT UNIT 2: 0.4667HA
-  1KM BUFFER
-  REMNANTVEGETATIONWITHIN 1KM
-  REGROWTH VEGETATION WITHIN 1KM
-  IMPACT ASSESSMENT UNIT UNCONNECTED PERIMETER
-  IMPACT ASSESSMENT UNITY CONNECTED PERIMETER

NOTES,

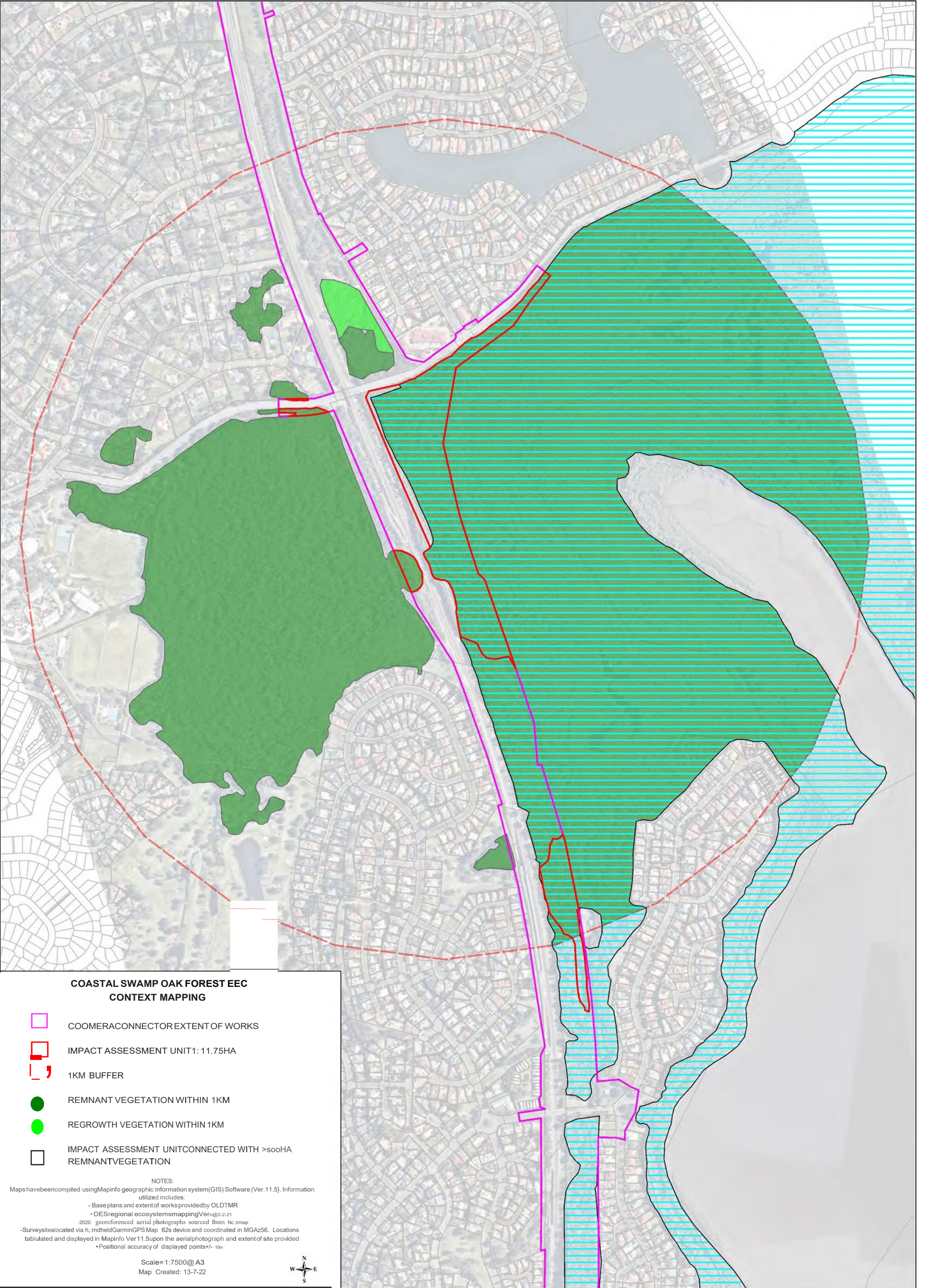
Maps have been compiled using Mapinfo geographic informationsyste-m (GIS) Software(Ver. 11.5).Information utilized includes:

- Baseplansandextent of worksprovided byOLDTMR
- DESregional ecosystems mapping Ver11@ 2-2-21

-2020 georeferenced aerial photographs sourced from Ncarmap
-Surveysites located via handheld Garmin GPSMap 62sdeviceandc.ordinated in MGAz56. Locations tabulated and displayed in Mapinfo Ver11.5upon the aerialphotograph andextent of site provided
- Positional accuracy of displayed points+/- 1.0m

Scale=17500@ A3
Map Created:13-7-21







**COASTAL SWAMP OAK FOREST EEC
CONTEXT MAPPING**

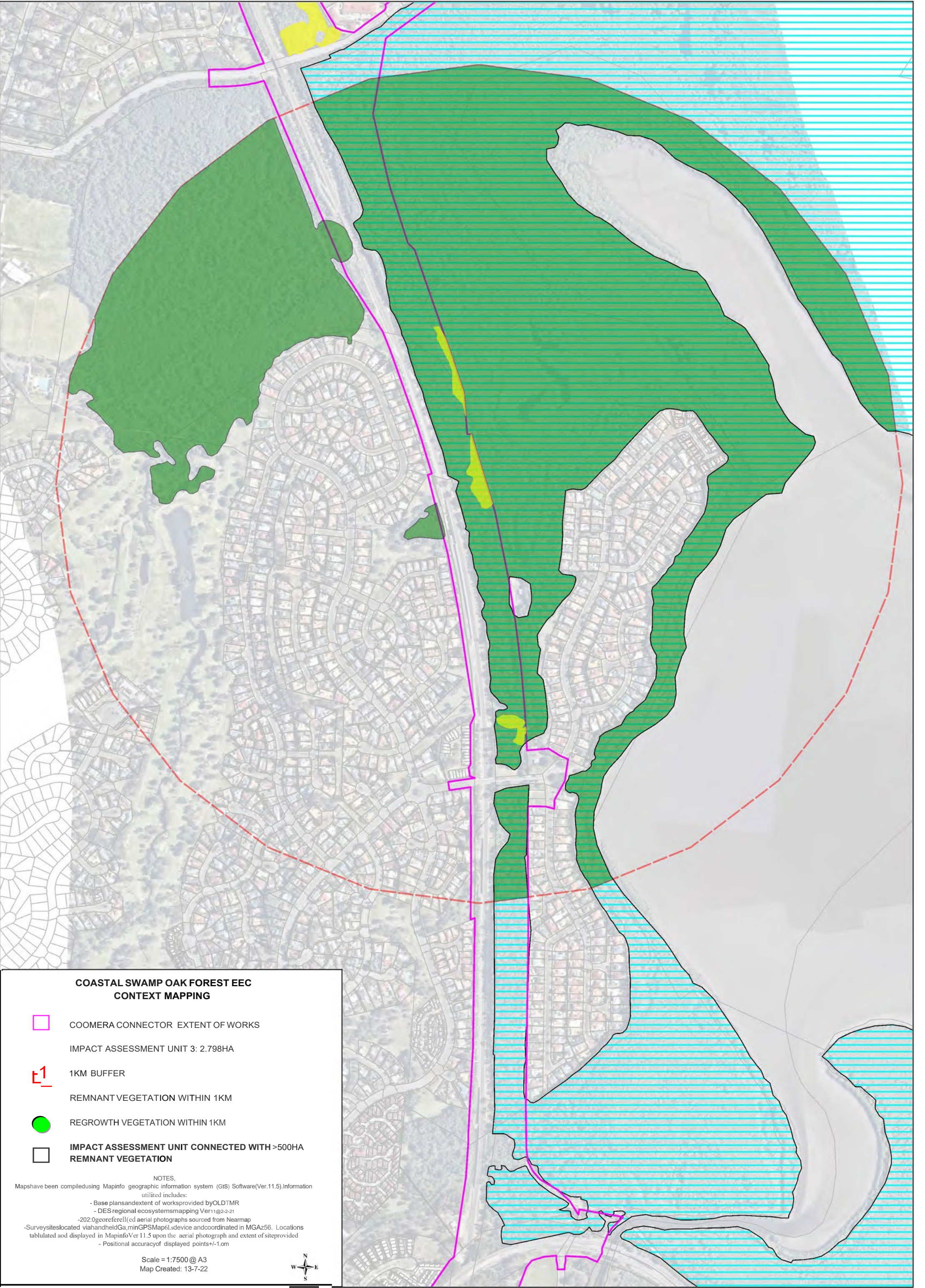
-  COOMERA CONNECTOR EXTENT OF WORKS
-  IMPACT ASSESSMENT UNIT 3: 2.798HA
-  1KM BUFFER
-  REMNANTVEGETATION WITHIN 1KM
-  REGROWTHVEGETATION WITHIN1KM
-  IMPACT ASSESSMENT UNIT UNCONNECTED PERIMETER
-  IMPACT ASSESSMENT UNITY CONNECTED PERIMETER

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
tabulated anddisplayed in MapinfoVer 11.5upon the aerial photograph.;ind extent of siteprovided
- Positional ac.curacyof displayed points*/ 10m

Scale = 1'7500@ A3
Map Created, 13-7-22

N
W + E
S





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 SOS 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	☐	56	533,199	6,914,528
GDA 94	☒	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	<i>Casuarina glauca</i> dominant	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	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	<i>Casuarina glauca</i>	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	<i>Phragmites australis</i>	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	<i>Juncus</i> spp.	Scientific Name	<i>Acrostichum speciosum</i>
Scientific Name	<i>Eleocharis dulcis</i>	Scientific Name	
Scientific Name	<i>Alternanthera denticulata</i>	Scientific Name	
Scientific Name	<i>Baumea articulata</i>	Scientific Name	
Scientific Name	<i>Gahnia clarkii</i>	Scientific Name	
Scientific Name	<i>Lygodium microphyllum</i>	Scientific Name	
Scientific Name	<i>Cyclosorus interruptus</i>	Scientific Name	

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

Total percentage cover within plot	4.00%		
Common Name	<i>Ipomoea cairica</i>	Common Name	
Common Name	<i>Syagrus ramanzoffiana</i>	Common Name	
Common Name	<i>Schinus terebinthifolius</i>	Common Name	
Common Name	<i>Solanum hispidum</i>	Common Name	
Common Name	<i>Salvinia molesta</i> [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 Coarse 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)

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

Part II: 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 ASSESSMENT
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
1	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	1. Recruitment of woody perennial species ecologically dominant layers regenerating (Number of)	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	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 B3 & 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 straminea	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	Platyserium 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%	





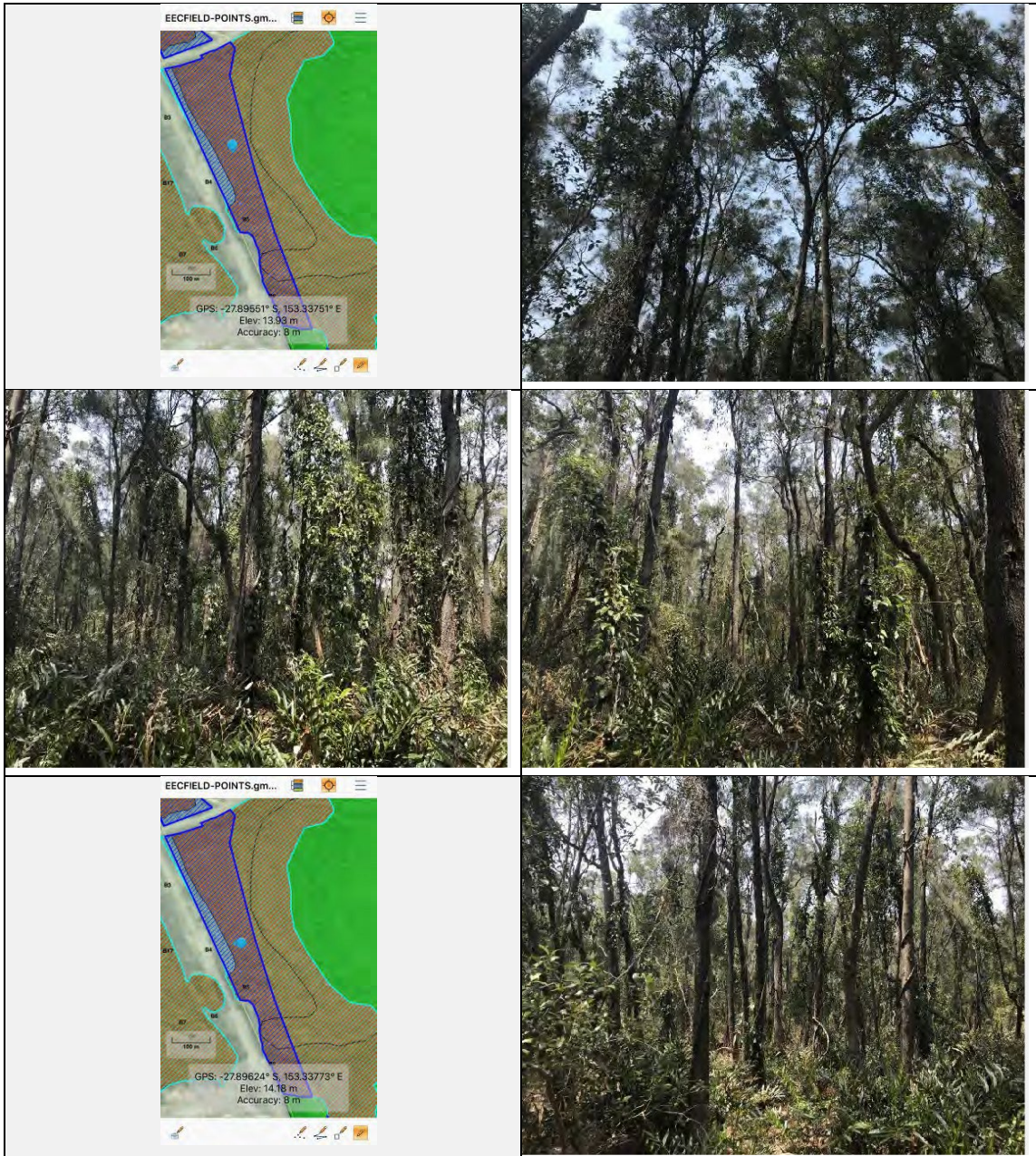
CANOPY IMAGES





UNDERSTOREY IMAGES

BELOW IMAGES FROM ELSEWHERE IN PATCH







Property	SWAMP OAK EEC CH WITHIN LARGE CONNECTED PATCHES (COOM BABAH + SURROUNDS) DATA SCALED FROM FIELD SOUTHEAST OF SITE SO6 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS
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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.

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 S03-S013, S015, S019

[illegible][illegible][illegible]

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	<i>Eleocharis dulcis</i>	Scientific Name	
Scientific Name	<i>Alternanthera denticulata</i>	Scientific Name	
Scientific Name	<i>Cyanogeton striata</i>	Scientific Name	
Scientific Name	<i>Lobelia stenophylla</i>	Scientific Name	
Scientific Name	<i>Cynanchum camosum</i>	Scientific Name	
Scientific Name	<i>Acrostichum speciosum</i>	Scientific Name	
Scientific Name		Scientific Name	

[illegible]

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

Total Length of Coarse 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:

Part IV- 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 ASSESSMENT
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number									
	Assessment Unit Area (ha)			1	2	3	4	5	6	7	8	9	10
	Regional Ecosystems			5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
	Bioregion			12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
			Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland					

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of	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										
2	Site Context Attributes	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%				

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 B4 AND B5 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 straminea	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	Platynerium 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

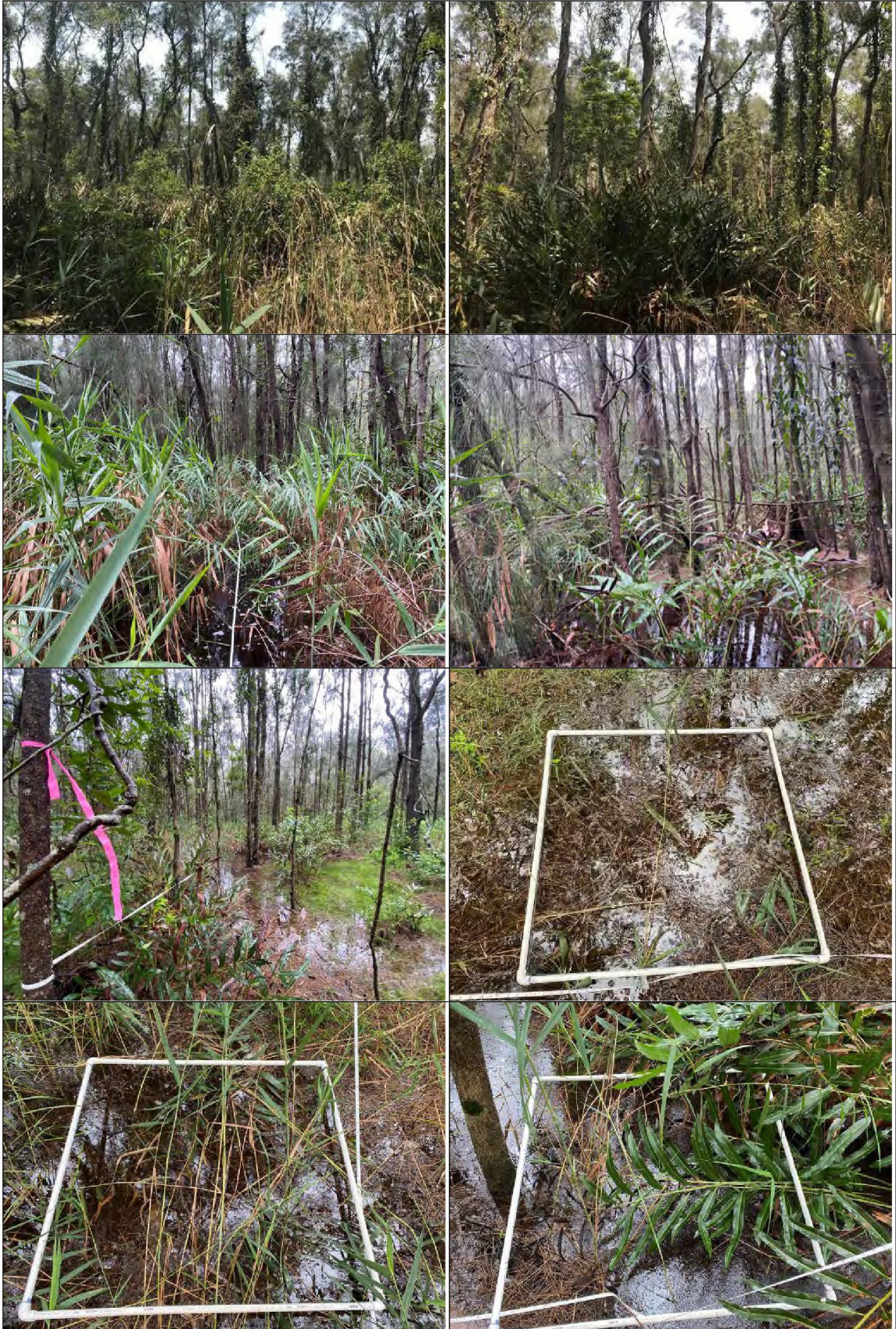
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

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 mauritanium		4	1	2
NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			5%		









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 OAKKEY CREEK] DATA SCALED FROM FIELD SITE SO17 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES	Date	VARIOUS
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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	0m Mark	Zone	Easting	Northing
WGS 84		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 Oakkey 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	<i>Casuarina glauca dominant</i>	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	<i>Enchylaena tomentosa</i>	Common Name	
Scientific Name	<i>Suaeda arbusculoides</i>	Common Name	
Scientific Name	<i>Casuarina glauca</i>	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	<i>Sporobolus virginicus</i>	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	<i>Juncus kraussii</i>	Common Name	
Scientific Name	<i>Alternanthera denticulata</i>	Common Name	
Scientific Name	<i>Commelina diffusa</i>	Common Name	
Scientific Name	<i>Cyperus spp.</i>	Common Name	
Scientific Name	<i>Fimbristylis ferruginea</i>	Common Name	
Scientific Name	<i>Eclipta prostrata</i>	Common Name	
Scientific Name		Common Name	

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

Total percentage cover within plot		2.00%	
Scientific Name	<i>Passiflora subpeltata</i>	Common Name	
Scientific Name	<i>Asparagus aethiopicus cv. Sprengeri</i>	Common Name	
Scientific Name	<i>Solanum seafortianum</i>	Common Name	
Scientific Name	<i>Schinus terebinthifolius</i>	Common Name	
Scientific Name	<i>Solanum americanum</i>	Common Name	
Scientific Name	<i>Cuphea carthagenensis</i>	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 Coarse 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 ASSES
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes		Assessment Unit Number									
	Assessment Unit Area (ha)		1	2	3	4	5	6	7	8	9	10
1	Site Condition Attributes	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. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of)	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%				
2	Site Context Attributes	- 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%				
		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 straminea (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 tomentosa	1-5	1	<1
V	Fimbristylis ferruginea	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 (0.04 HA QUADRAT)

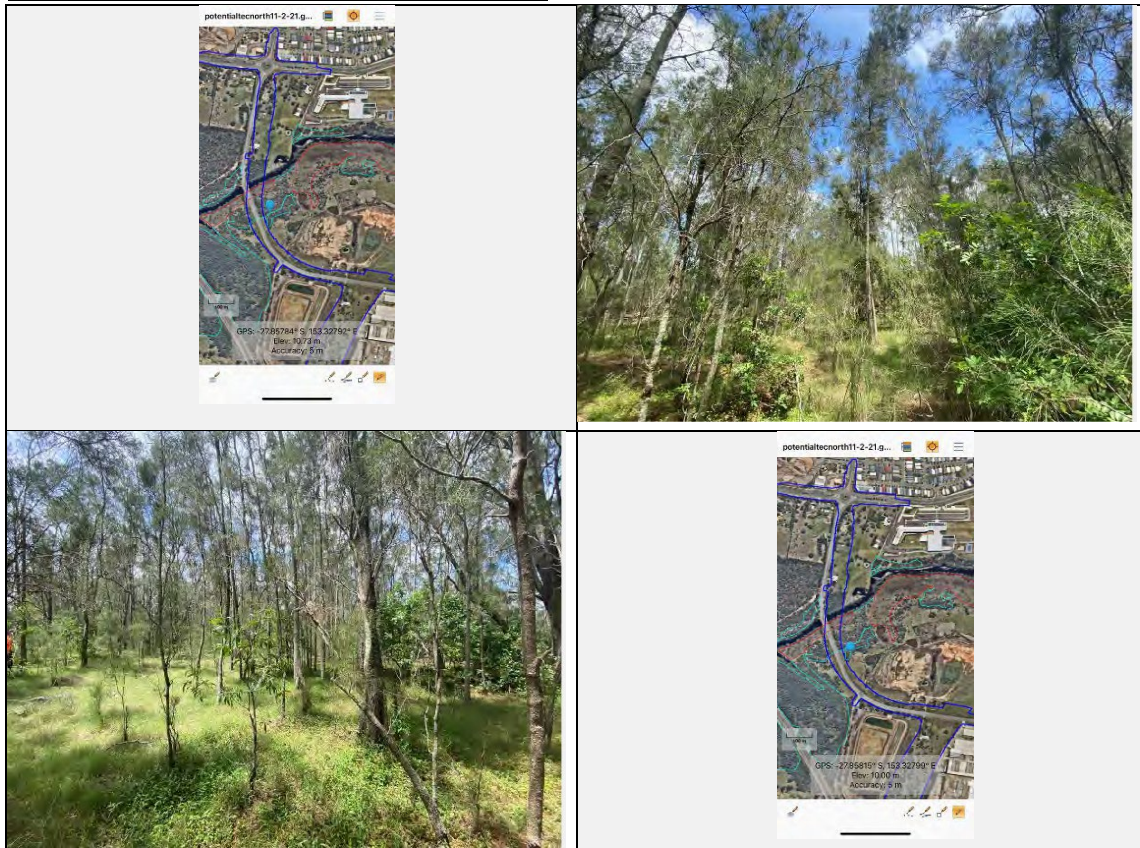
GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
L	Passiflora subpeltata		20	3	<1
D	Asparagus aethiopicus cv. sprengeri	√	5	1	<1
L	Solanum seaforthium		3	1	<1
T/S	Schinus terebinthifolius	√	5	1	<1
S	Solanum americanum		10	2	<1
F	Cuphea carthagenensis		10	2	<1
NON-NATIVE % OF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







BELOW IMAGES FROM ELSEWHERE IN PATCH





[illegible]

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

Total Length of Coarse 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 ASSES
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number									
	Assessment Unit Area (ha)			1	2	3	4	5	6	7	8	9	10
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating	(Number of)	5.875	5.875	0.23335	0.23335	1.399	1.399	0	0	0	0
		2. Native plant species richness		12.1.1	12.1.1	12.1.1	12.1.1	12.1.1	12.1.1				
		- Trees		Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland				
		- Shrubs		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%				
		- Grasses		200.00%	100.00%	100.00%	100.00%	400.00%	400.00%				
		- Forbs		100.00%	100.00%	200.00%	200.00%	100.00%	100.00%				
		3. Tree canopy height		50.00%	150.00%	50.00%	50.00%	100.00%	100.00%				
		- Canopy Layer		266.67%	200.00%	200.00%	100.00%	166.67%	66.67%				
		- Sub-Canopy Layer		115.00%	115.00%	125.83%	111.67%	98.33%	121.67%				
		- Emergent Layer		95.71%	97.14%	97.14%	82.86%	78.57%	101.43%				
2	Site Context Attributes	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 %
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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 ferruginea	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

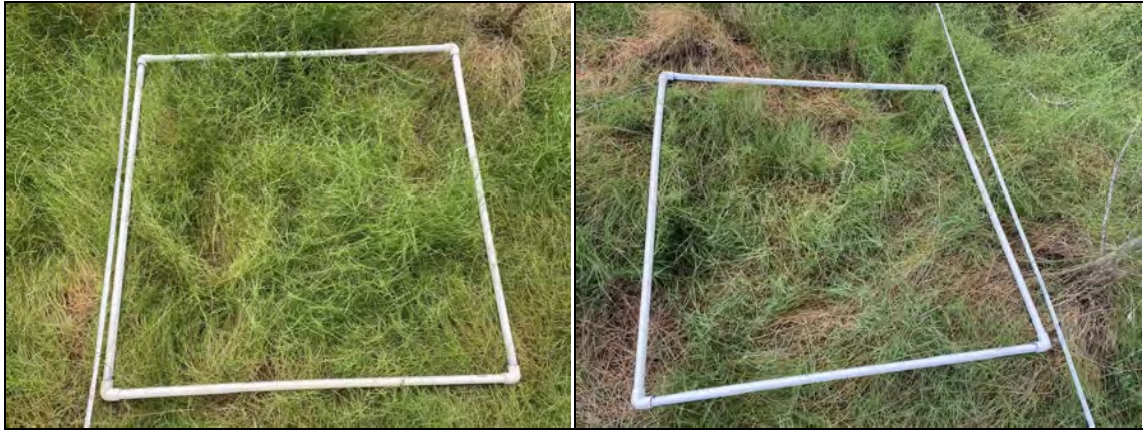
Areas of little to no understorey vegetation cover (e.g. plant litter) are included if key diagnostics are met and non-native species are below thresholds

NON-NATIVE UNDERSTOREY SPECIES (0.04HA QUADRAT)

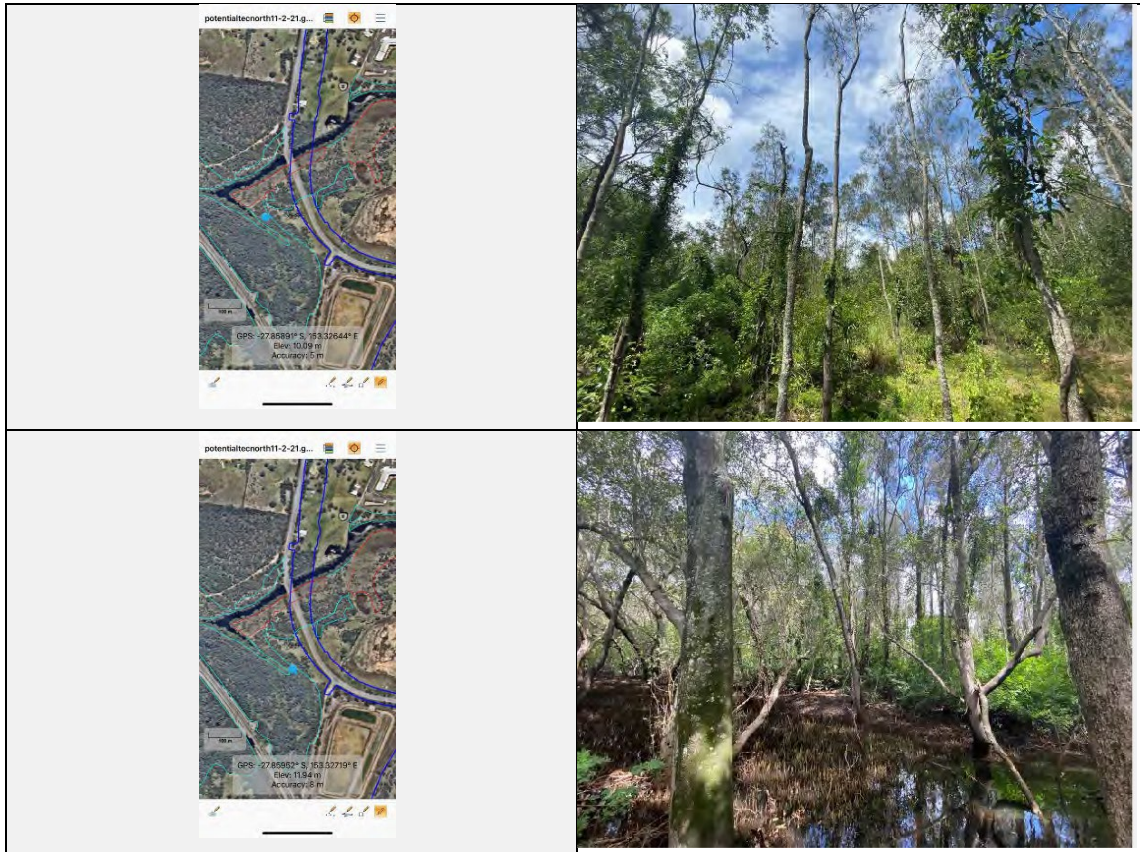
GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
L	Passiflora subpeltata		1	1	<1
G	Paspalum urvillei		1	1	<1
T/S	Schinus terebinthifolius	√	10	3	1
S	Baccharis halimifolia	√	3	1	<1
NON-NATIVE % OF TOTAL UNDERSTOREY VEGETATION COVER			<5%		







BELOW IMAGES FROM ELSEWHERE IN PATCH





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

Part C - Site Data

Property	SURVEY OBTAINED ON WITHIN GUY FORTNIGHTLY TO ENSURE CONNECTED PATCHES (COORINATED WITH SURROUNDS) BUT HIGHER LEVEL OF WEED INVASION DATA SCALED FROM FIELD SITE SO3 WITH ADDITIONAL SURVEY TO CONFIRM LARGE TREES AND CWD	Date	VARIOUS
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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.
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Datum	0m Mark	Zone	Easting	Northing
WGS 84	☐	56	533,012	6,914,671
GDA 94	☒	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	<i>Casuarina glauca</i> dominant	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	Common Name	
Scientific Name	<i>Callistemon salignus</i>	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	<i>Casuarina glauca</i>	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	<i>Phragmites australis</i>	Common Name	
Scientific Name	<i>Entolasia stricta</i>	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	<i>Juncus</i> spp.	Common Name	
Scientific Name	<i>Alternanthera denticulata</i>	Common Name	
Scientific Name	<i>Cynanchum canosum</i>	Common Name	
Scientific Name	<i>Cynogeton procerus</i>	Common Name	
Scientific Name	<i>Acrostichum speciosum</i>	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	<i>Asparagus aethiopicus</i> cv. <i>Sprengeri</i>	Common Name	
Scientific Name	<i>Ipomoea cairica</i>	Common Name	
Scientific Name	<i>Senna pendula</i>	Common Name	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Passiflora suberosa</i>	Common Name	
Scientific Name	<i>Sphagneticola trilobata</i>	Common Name	
Scientific Name	<i>Schinus terebinthifolius</i>	Common Name	
Scientific Name	<i>Baccharis halimifolia</i>	Common Name	
Scientific Name	<i>Corymbia torelliana</i>	Common Name	
Scientific Name	<i>Melinis minutiflora</i>	Common Name	

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

Total Length of Coarse 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)

Native perennial grass cover	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	30.00%	20.00%	5.00%	50.00%	80.00%	37.00%
Organic litter	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
	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:	
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Number of ecologically dominant layer species regenerating:	100				
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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 ASSESSMENT
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes				Assessment Unit Number									
	Assessment Unit Area (ha)				1	2	3	4	5	6	7	8	9	10
1	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 ecologically dominant layers regenerating	(Number of)		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.	SO ₃	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 straminea	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]

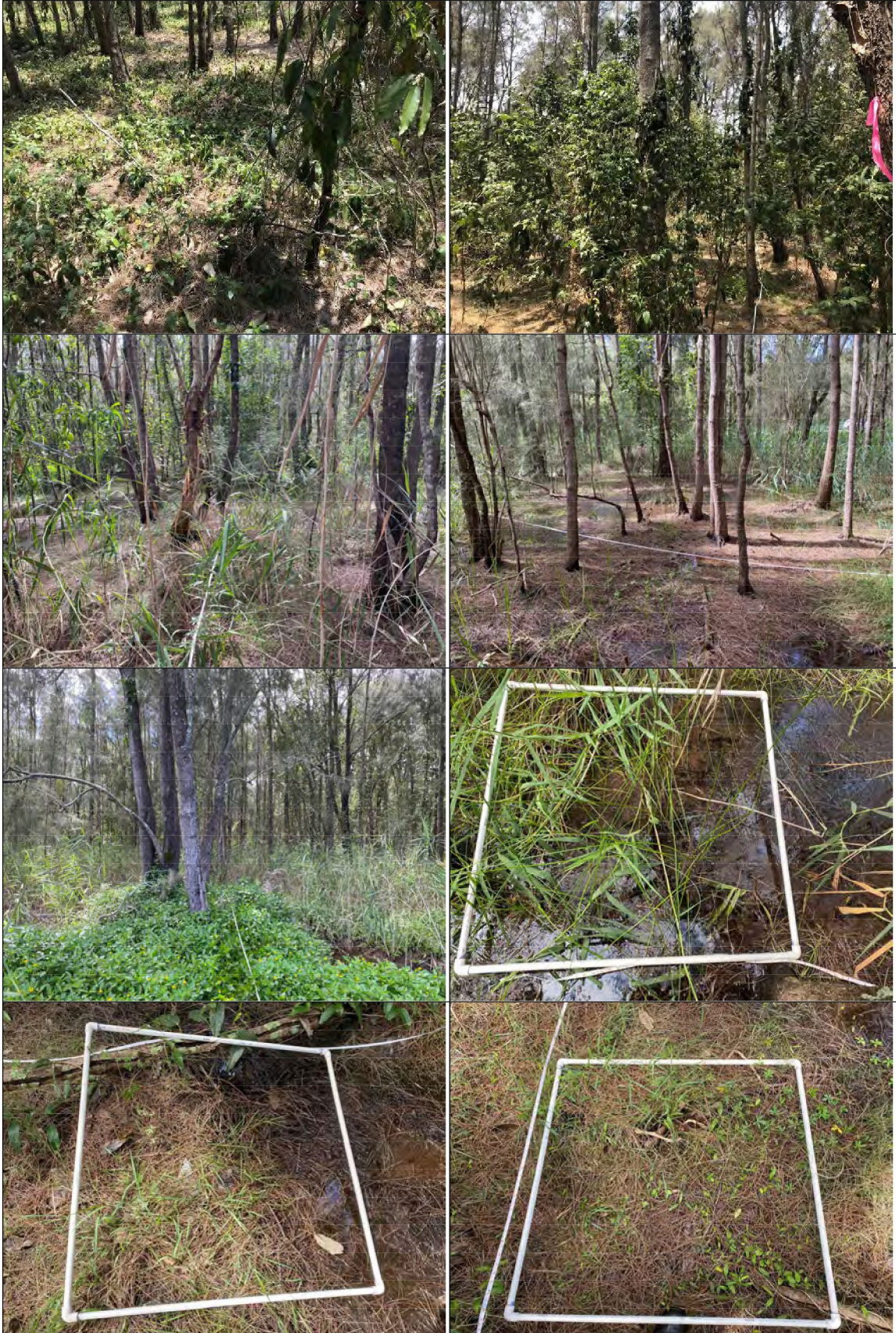
Abundance: <5, 5-10, 10-20, 20-50, 50-100, 100-500, 500-1000, >1000

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 EEL CH 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
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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	☒	Zone	Easting	Northing
	50m Mark			
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	<i>Casuarina glauca</i>	Common Name	
Scientific Name	<i>Livistana australis</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Archontophoenix cunninghamiana</i>	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	<i>Casuarina glauca</i>	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	<i>Ottocloa gracillima</i>	Common Name	
Scientific Name	<i>Opismenus aemulus</i>	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	<i>Stephania japonica</i>	Common Name	
Scientific Name	<i>Acrostichum speciosum</i>	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	<i>Senna pendula</i>	Common Name	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Schinus terebinthifolius</i>	Common Name	
Scientific Name	<i>Ipomoea cairica</i>	Common Name	
Scientific Name	<i>Asparagus aethiopicus</i> cv. <i>Sprengeri</i>	Common Name	
Scientific Name	<i>Passiflora suberosa</i>	Common Name	
Scientific Name	<i>Muraya paniculata</i>	Common Name	
Scientific Name	<i>Solanum seafarthingium</i>	Common Name	
Scientific Name	<i>Paspalum dilatatum</i>	Common Name	
Scientific Name		Common Name	

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

Total Length of Coarse 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 ASSES
Total Area	15.0147

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

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

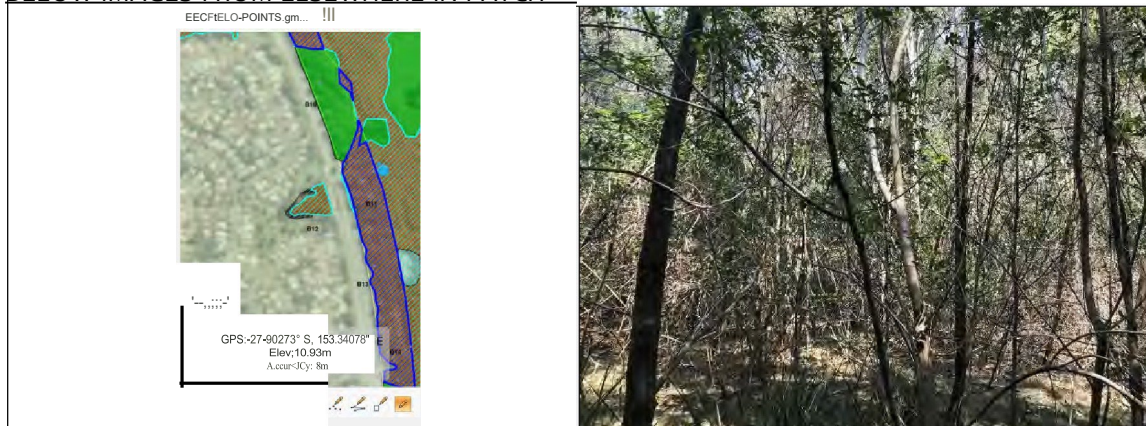
GROWTH FORM	SPECIES	TRANSFORMER SPECIES	EST ABUNDANCE	B-B SCORE	EST COVER
S/T	Senna pendula	√	20-50	5	20
S	Lantana camara	√	20-50	5	30
S/T	Schinus terebinthifolius	√	50-100	5	30
L	Ipomoea cairica	√	1	1	<1
F	Asparagus aethiopicus cv. sprengeri	√	3	2	<1
L	Passiflora suberosa		3	2	<1
NON-NATIVE % OF TOTAL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

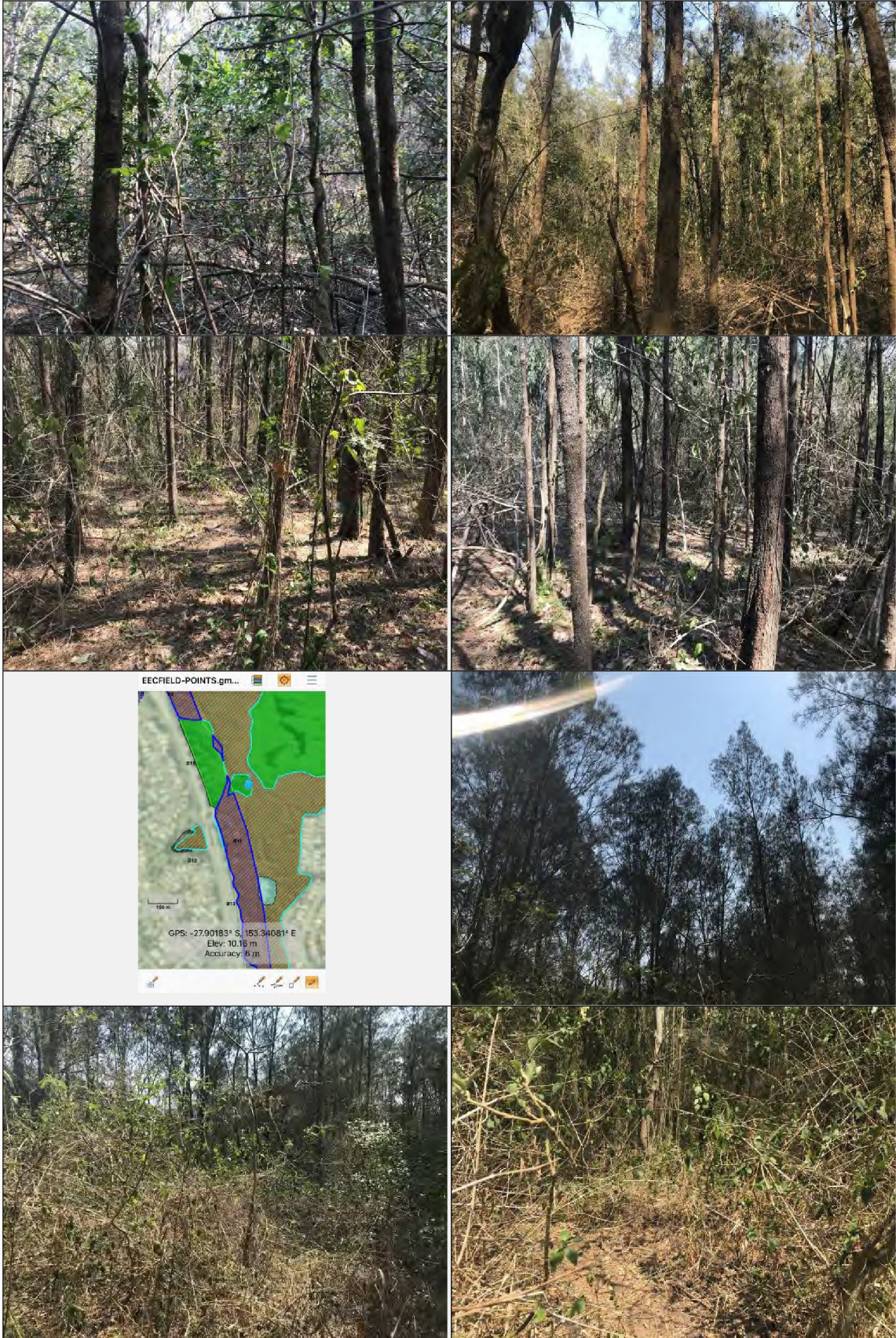


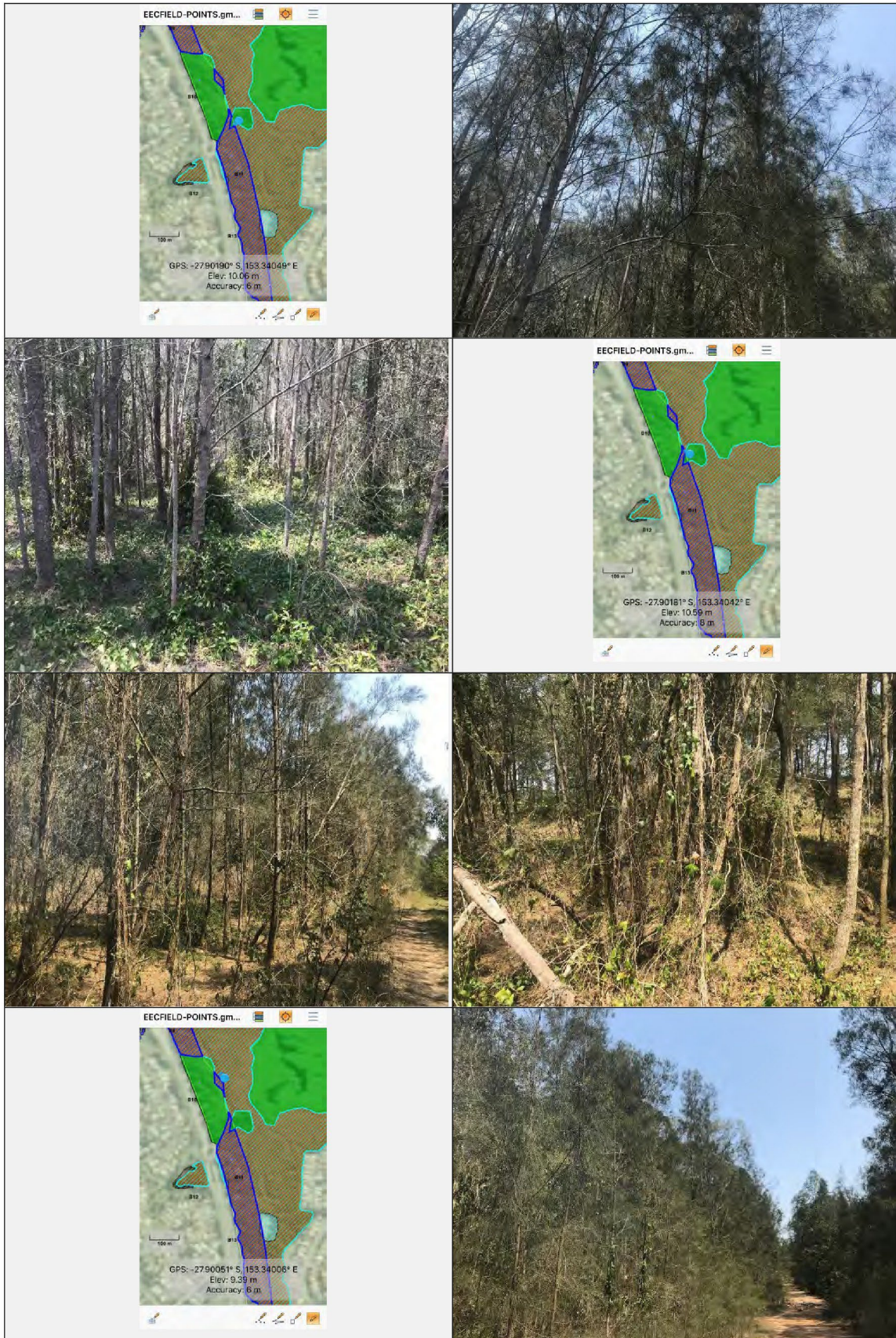




BELOW IMAGES FROM ELSEWHERE IN PATCH







Appendix E2: Coastal Swamp Oak TEC – summarised HQS data

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	3	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	3	254.0	3	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	3	5	48	960.0	3	67	1340.0	3	1150.0	3													
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	48.9	2													
Non-native plant cover	0	4		10	2		10	3.0	10	0	2		10	2		10	2	10	0	30		3	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 Quality 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																																				

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

Appendix F: Impact Site Survey Data

Appendix F1: Koala habitat



Part C - Site Data

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	0m Mark	Zone	Easting	Northing
WGS 84 GDA 94		56	533569	6912270
	50m Mark	Zone	Easting	Northing
		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)

Part D - Native species richness: (list species below)			
Tree species richness:			
Total number of species	8		
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	
Scientific Name	<i>Corymbia intermedia</i>	Common Name	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus tindalliae</i>	Common Name	
Scientific Name	<i>Lophostemon suaveolens</i>	Common Name	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:

Total number of species	6		
Scientific Name	<i>Acacia disarrima</i>	Common Name	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	
Scientific Name	<i>Jageria pseudorhus</i>	Common Name	
Scientific Name	<i>Syzygium luehmannii</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:

[illegible]

Forbs and others (non grass ground) species richness:

Total number of species	7		
Scientific Name	<i>Lepidosperma laterale</i>	Scientific Name	
Scientific Name	<i>Peridium esculentum</i>	Scientific Name	
Scientific Name	<i>Lomandra longifolia</i>	Scientific Name	
Scientific Name	<i>Lobelia purpurascens</i>	Scientific Name	
Scientific Name	<i>Goodenia rotundifolia</i>	Scientific Name	
Scientific Name	<i>Geodorum densiflorum</i>	Scientific Name	
Scientific Name	<i>Eustrephus latifolius</i>	Scientific Name	

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

[illegible]

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

Total Length of Coarse 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:	
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Number of ecologically dominant layer species regenerating:	100				
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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 Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover

2	Site Context Attributes	11. Size of patch (fragmented)
		12. Connectedness (fragmented)
		13. Context (fragmented)
		14. Distance from water (intact)
		15. Ecological corridors

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
13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
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 WGS 84 GDA 94	0m Mark	Zone	Easting
		56	53454
	50m Mark	Zone	Easting
			533436
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 dominant. 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	
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 disarrima	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	Ottachloa 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	

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 Coarse 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)

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
native perennial grass cover	2.00%	5.00%	1.00%	15.00%	10.00%	6.60%
organic litter	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:

Part IV: Number of large trees / tree canopy height		Part V: Number of large tree DBH benchmark used:		Part VI: Number of large non eucalypt trees benchmark used:	
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

Part 1 - 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	NERA CONNECTOR: IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number								
	Assessment Unit Area (ha)			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
	Regional Ecosystems			13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
	Bioregion			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
				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 ecologically dominant layers regenerating	(Number of)	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	0m Mark	Zone	Easting
WGS 84		56	534834
GDA 94	50m Mark	Zone	Easting
		56	534796
Plot bearing	280	Recorders	TR

Site description and Location (including details of discrete polygons within the assessment unit)

Corymbia intermedia, C. henryi, Eucalyptus seana 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	<i>Corymbia intermedia</i>	Scientific Name	<i>Lophostemon suaveolens</i>
Scientific Name	<i>Eucalyptus propinqua</i>	Scientific Name	<i>Lophostemon confertus</i>
Scientific Name	<i>Eucalyptus crebra</i>	Scientific Name	<i>Allocasuarina littoralis</i>
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	
Scientific Name	<i>Eucalyptus carnea</i>	Common Name	
Scientific Name	<i>Corymbia henryi</i>	Common Name	
Scientific Name	<i>Eucalyptus microcorys</i>	Common Name	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus seana</i>	Common Name	
Scientific Name	<i>Eucalyptus pilularis</i>	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	<i>Acacia leiocalyx</i>	Common Name	
Scientific Name	<i>Acacia dispartima</i>	Common Name	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	Common Name	
Scientific Name	<i>Allocasuarina littoralis</i>	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	<i>Themeda triandra</i>	Common Name	
Scientific Name	<i>Imperata cylindrica</i>	Common Name	
Scientific Name	<i>Cymbopogon refractus</i>	Common Name	
Scientific Name	<i>Entolasia stricta</i>	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	<i>Geodorum densiflorum</i>	Scientific Name	<i>Chrysocephalum apiculatum</i>
Scientific Name	<i>Pteridium esculentum</i>	Scientific Name	<i>Goodenia rotundifolia</i>
Scientific Name	<i>Lomandra filiformis</i>	Scientific Name	<i>Glycine clandestina</i>
Scientific Name	<i>Lepidosperma laterale</i>	Common Name	
Scientific Name	<i>Labelia purpurascens</i>	Common Name	
Scientific Name	<i>Desmodium rhytidophyllum</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	

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

Total percentage cover within plot	2.00%		
Scientific Name	<i>Asparagus aethiopicus</i>	Common Name	
Scientific Name	<i>Paspalum spp.</i>	Common Name	
Scientific Name	<i>Gomphocarpus physocarpus</i>	Common Name	
Scientific Name	<i>Passiflora subpeltata</i>	Common Name	
Scientific Name	<i>Schefflera actinophylla</i>	Common Name	
Scientific Name	<i>Lantana camara</i>	Common Name	
Scientific Name	<i>Senna pendula var. glabrata</i>	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 Coarse 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	NERA CONNECTOR: IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

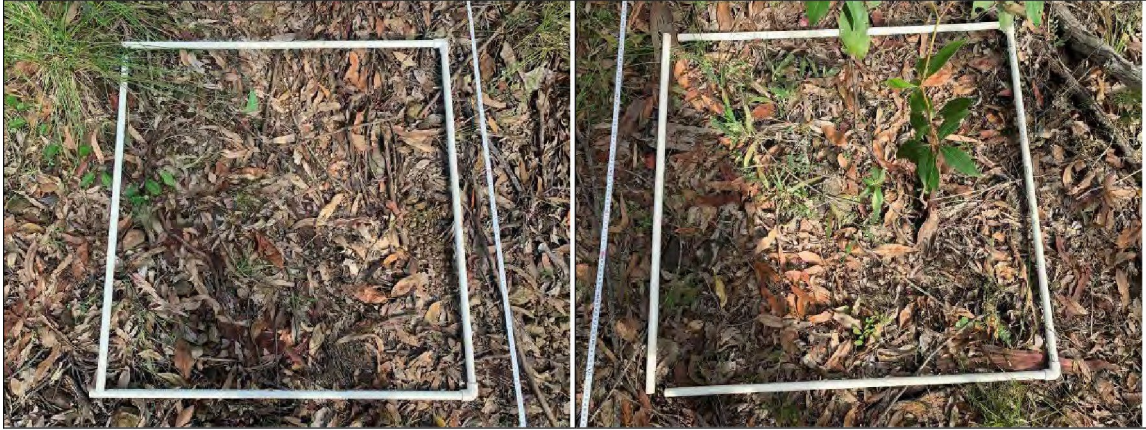
Assessment Unit Number								
IAU1-AU1 12.11.24	IAU1-AU2 12.11.24	IAU2-AU3 12.11.25	IAU2-AU4 12.11.25	IAU3-AU5 12.11.23	IAU3-AU6 12.11.23	IAU4-AU7 REGROWTH 12.3.11	IAU4-AU8 REGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGROWTH	12.3.20 REGROWTH	12.3.11
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating	(Number of)
		2. Native plant species richness	
		- Trees	
		- Shrubs	
		- Grasses	
		- Forbs	
		3. Tree canopy height	
		- Canopy Layer	
		- Sub-Canopy Layer	
		- Emergent Layer	
		4. Tree canopy cover	
		- Canopy Layer	
		- Sub-Canopy Layer	
		- Emergent Layer	
		5. Shrub canopy cover	
		6. Native perennial grass cover	
		7. Organic litter	
		8. Large trees	
		9. Coarse woody debris (Meters)	
		10. Weed cover	

2	Site Context Attributes	11. Size of patch (fragmented)	
		12. Connectedness (fragmented)	
		13. Context (fragmented)	
		14. Distance from water (intact)	
		15. Ecological corridors	









Property	Impact Area Coomera Connector Stage 1	Date	8.4.21
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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.

Site description and Location (including details of discrete polygons within the assessment unit)

Tree species richness:

Shrub species richness:

Grass species richness:

Forbs and others (non grass ground) species richness:

Total percentage cover within plot	1.00%
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[illegible]

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

Total Length of Coarse 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	MEIRA CONNECTOR, IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number								
	Assessment Unit Area (ha)			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
	Regional Ecosystems			13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
	Bioregion			12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	REGROWTH	REGROWTH	12.3.11
				100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of		80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		2. Native plant species richness		75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Trees		33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Shrubs		41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		- Grasses		84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Forbs		100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		3. Tree canopy height										
		- 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										
2	Site Context Attributes	4. Tree canopy cover		98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		- Canopy Layer		10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		- Sub-Canopy Layer		212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		- Emergent Layer		33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		5. Shrub canopy cover		99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		6. Native perennial grass cover		3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
		7. Organic litter		10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00
		8. Large trees		5.00	5.00	0.00	2.00	2.00	2.00	0.00	2.00	4.00
		9. Coarse woody debris (Meters)		4.00	4.00	2.00	2.00	2.00	2.00	0.00	4.00	2.00
		10. Weed cover		6.00	6.00	6.00	6.00	6.00	6.00	4.00	4.00	6.00





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

Total Length of Coarse 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:

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, 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	NERA 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 ecologically dominant layers regenerating (Number of											
		2. Native plant species richness											
		- Trees											
		- Shrubs											
		- Grasses											
		- Forbs											
		3. Tree canopy height											
		- Canopy Layer											
		- Sub-Canopy Layer											
		- Emergent Layer											
		4. Tree canopy cover											
		- Canopy Layer											
		- Sub-Canopy Layer											
		- Emergent Layer											
2	Site Context Attributes	11. Size of patch (fragmented)											
		12. Connectedness (fragmented)											
		13. Context (fragmented)											
		14. Distance from water (intact)											
		15. Ecological corridors											









Part C - Site Data

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.

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by <i>Eucalyptus pilularis</i> . Small drainage line around the 80m mark. Flora field sheet C13.

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

Forbs and others (non grass ground) species richness:				
Total number of species	5			
Scientific Name	<i>Lepidosperma laterale</i>	Common Name		
Scientific Name	<i>Dianella caerulea</i>	Common Name		
Scientific Name	<i>Lobelia purpurascens</i>	Common Name		
Scientific Name	<i>Lomandra longifolia</i>	Common Name		
Scientific Name	<i>Goodenia rotundifolia</i>	Common Name		
Scientific Name		Common Name		
Scientific Name		Common Name		

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

[illegible]

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

Total Length of Coarse 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

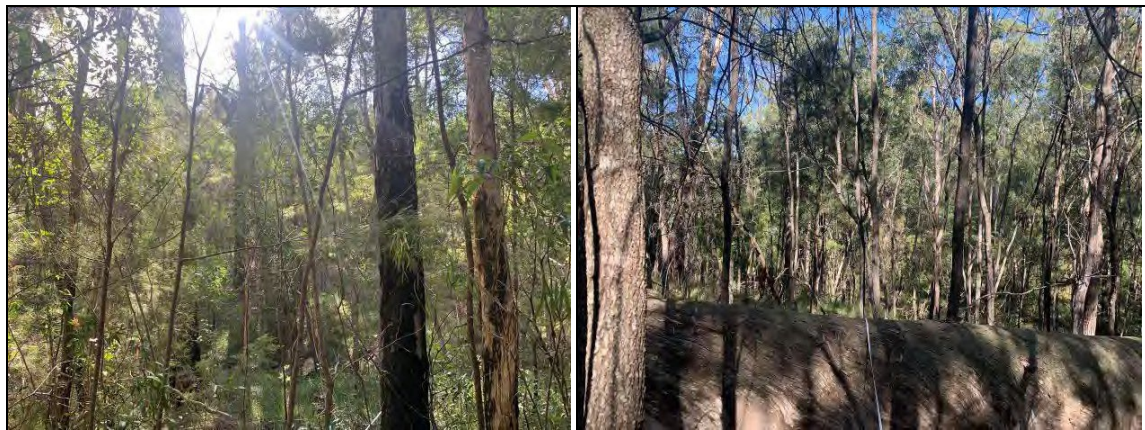
Part J - Site Context Score

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	NERA CONNECTOR: IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number								
	Assessment Unit Area (ha)			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
	Regional Ecosystems			13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
	Bioregion			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
				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 ecologically dominant layers regenerating	(Number of)	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	0m Mark	Zone	Easting	Northing
WGS 84	☐	56	532493	6917493
GDA 94	☒	Zone	Easting	Northing
	50m Mark	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	
Shrub species richness:			
Total number of species	0		
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	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	<i>Cyperus spp</i>	Common Name	
Scientific Name	<i>Parsonia straminea</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	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	<i>Singapore daisy</i>	Common Name	
Scientific Name	<i>Blue Billygoat Weed</i>	Common Name	
Scientific Name	<i>Columbian Waxweed</i>	Common Name	
Scientific Name	<i>Cobblers Pegs</i>	Common Name	
Scientific Name	<i>Devils Fig</i>	Common Name	
Scientific Name	<i>Cocos Palm</i>	Common Name	
Scientific Name	<i>Pigeon Grass</i>	Common Name	
Scientific Name	<i>Balloon Cotton</i>	Common Name	
Scientific Name	<i>Latona</i>	Common Name	
Scientific Name	<i>Silverleaf Desmodium</i>	Common Name	

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

Total Length of Coarse 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

Canopy: 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	NERA CONNECTOR: IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes		Assessment Unit number								
	Assessment Unit Area (ha)		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
	Regional Ecosystems		13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
	Bioregion		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
1	Site Condition Attributes	1. Recruitment of woody perennial species 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		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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Casuarina glauca</i>	Common Name	
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	
Scientific Name	<i>Acacia dispartima</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Corymbia intermedia</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Acacia podalyrifolia</i>	Common Name	
Scientific Name	<i>Acacia leiocalyx</i>	Common Name	
Scientific Name	<i>Callistemon salignus</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	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	<i>Themeda triandra</i>	Common Name	
Scientific Name	<i>Entolasia stricta</i>	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	<i>Parsonsia straminea</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	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	<i>Zig zag wattle</i>	Common Name	rhodes grass
Scientific Name	<i>wattle</i>	Common Name	singapore daisy
Scientific Name	<i>lantana</i>	Common Name	Elastic grass
Scientific Name	<i>passionflower</i>	Common Name	
Scientific Name	<i>asparagus fern</i>	Common Name	
Scientific Name	<i>cocos palm</i>	Common Name	
Scientific Name	<i>slash pine</i>	Common Name	
Scientific Name	<i>yucca</i>	Common Name	
Scientific Name	<i>pigeon grass</i>	Common Name	
Scientific Name	<i>paspalum/vasey grass</i>	Common Name	

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

Total Length of Coarse 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:	
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Number of ecologically dominant layer species regenerating:	100
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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

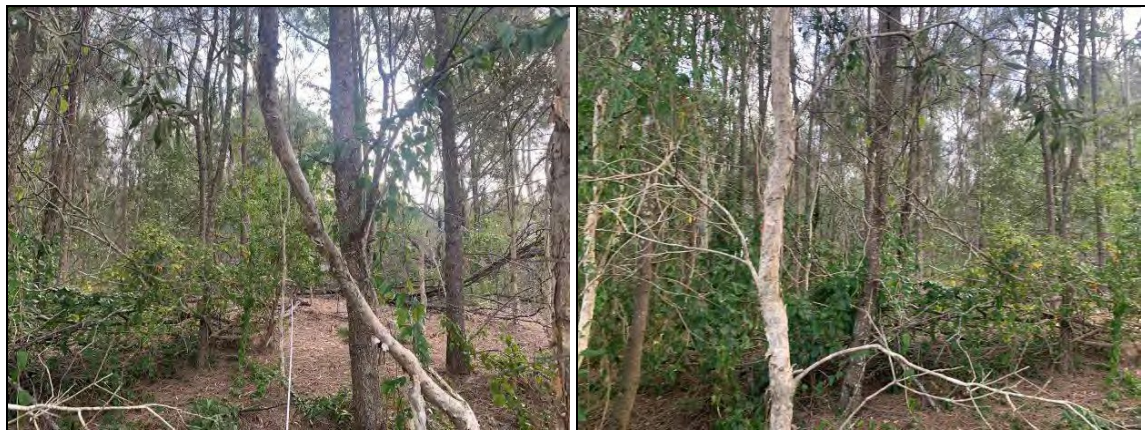
Part J - Site Context Score

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

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

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes		Assessment Unit Number								
	Assessment Unit Area (ha)		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
	Regional Ecosystems		13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
	Bioregion		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
1	Site Condition Attributes	1. Recruitment of woody perennial species 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	0m Mark	Zone	Easting	Northing
WGS 84	☐ ☒	56	533689	6909494
GDA 94		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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus microcarys</i>	Common Name	
Scientific Name	<i>Casuarina glauca</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	
Scientific Name	<i>Acacia disarrima</i>	Common Name	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	
Scientific Name	<i>Callistemon salignus</i>	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Myrsine variabilis</i>	Common Name	

Shrub species richness:			
Total number of species	7		
Scientific Name	<i>Ficus watkinsiana</i>	Common Name	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Macaranga tanarius</i>	Common Name	
Scientific Name	<i>Glochidion sumatranum</i>	Common Name	
Scientific Name	<i>Cryptocarya triplinervis</i>	Common Name	
Scientific Name	<i>Leptospermum polygalifolium</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	<i>Oplismenus aemulus</i>	Common Name	
Scientific Name	<i>Ottocloa gracilima</i>	Common Name	
Scientific Name	<i>Themeda triandra</i>	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	<i>Goodenia rotundifolia</i>	Scientific Name	<i>Persicaria attenuata</i>
Scientific Name	<i>Maclura cochinchinensis</i>	Scientific Name	<i>Pseuderanthemum variabile</i>
Scientific Name	<i>Parsonsia straminea</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Hardenbergia violacea</i>	Common Name	
Scientific Name	<i>Smilax australis</i>	Common Name	

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

Total percentage cover within plot	25.00%		
Scientific Name	<i>Mangifera indica</i>	Scientific Name	<i>Solanum nigrum</i>
Scientific Name	<i>Lantana camara</i>	Scientific Name	<i>Asparagus virgatus</i>
Scientific Name	<i>Passiflora suberosa</i>	Common Name	
Scientific Name	<i>Ageratina adenophora</i>	Common Name	
Scientific Name	<i>Senna pendula var. glabrata</i>	Common Name	
Scientific Name	<i>Ageratum houstonianum</i>	Common Name	
Scientific Name	<i>Setaria sphacelata</i>	Common Name	
Scientific Name	<i>Senecio madagascariensis</i>	Common Name	
Scientific Name	<i>Cuphea carthagenensis</i>	Common Name	
Scientific Name	<i>Solanum torvum</i>	Common Name	

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

Total Length of Coarse 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	NERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes			Assessment Unit Number								
	Assessment Unit Area (ha)	Regional Ecosystems	Bioregion	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
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating	(Number of)	13.95	13.95	10.28	10.28	7.655	7.655	3.347	3.347	3.347
		2. Native plant species richness		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
		- Trees		Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
		- Shrubs		100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		- Grasses		80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Forbs		75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		3. Tree canopy height		33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Canopy Layer		41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		- Sub-Canopy Layer		84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Emergent Layer		100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
2	Site Context Attributes	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%
		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

KOALA					HABITAT QUALITY SCORE = 7.42										ROUNDS TO 7/10														
Assessment Unit - Regional Ecosystem																													
Site Reference																													
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 Condition																													
Site Context																													
Size of patch (ha)																													
Connectivity																													
Context																													
Ecological Corridors																													
Role of site location to species overall population in the state																													
Absence of threats *																													
Species mobility capacity																													
Site Context Score																													
MAX Site Context Score																													
Site Condition Score																													
MAX Site Condition Score																													
Site Condition Score - out of 3																													
Site Context Score																													
MAX Site Context Score																													
Site Context Score - out of 3																													
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) **																													
Presence detected on or adjacent to site (neighbouring property with connecting habitat)																													
Species usage of the site (habitat type & evidenced usage)																													
Approximate density (per ha)																													
Role/importance of species population on site																													
Total SRR score (out of 70)																													
Max SRR Score																													
SRR Score (out of 4)																													
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																													
Final habitat quality score (weighted)																													
Site Condition score (out of 3)																													
Site Context Score (out of 3)																													
Species Stocking Rate Score (out of 4)																													
Habitat Quality score (out of 10)																													
Impact Assessment Unit area (ha)																													
Total impact area (ha) for this MNES																													
Size Weighting																													
Weighted Habitat Quality Score																													

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



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

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.	

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	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	
Scientific Name	<i>Corymbia intermedia</i>	Common Name	
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus tindaliae</i>	Common Name	
Scientific Name	<i>Lophostemon suaveolens</i>	Common Name	
Scientific Name	<i>Corymbia citriodora</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Shrub species richness:			
Total number of species	6		
Scientific Name	<i>Acacia disparima</i>	Common Name	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	
Scientific Name	<i>Jagera pseudorhus</i>	Common Name	
Scientific Name	<i>Syzygium luehmannii</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

[illegible]

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

[illegible]

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

Total Length of Coarse 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

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	NERA CONNECTOR, IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating (Number of)
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
		11. Size of patch (fragmented)

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

IAU1-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 AU3	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	
Lophostemon confertus	0	
Corymbia dtridora	0.65	4
GHFF FORAGING TREE COUNT/HA		148
%BENCHMARK		n.5.6007961
GHFFSIGNIACANTFORAGING TREE COUNT/HA		78
%BENCHMARK		66.82109765

denotes GHFF difft/foraging tre@sp@CJies per Eby & Law<2008>

denotes si,gnificant GHFF diet/foraging u e species I'ET Eby & Law (2008)

12.11..Sa/12.1124	rel.ative m...e,-	%jleo.	nurnbers/ltes;	weighted m	tltatco1fe-r	*Kmver	aire tota., stem alle
Eucal ptu, w,daU**	D.42	D.1S	13	'85	100J.S	D.147	244
Eu<0>1 pn... aeb,a	D.33	0.26	S.911	.155	as.842s	D.OSSII	244
Eucal,ipu.1s:Cilmea	0.E	D. 1	14.00	E0.875	152..57625	0.1.Sis	244
Eucalyptus >Jd.ero. phrola	C.24	(17	IIU	10.44	168.0II<I	□.161	244
Coryml,I*, ntermedJa	Cl.12	0.78	1.,94	9.51	111.6858.	Cl.116	244
Eu<0>1 prn, proplnq""	0..D;	0..15	li.US	1.. 1	2LOIDS	0.021	244
Corymhl* amodora	IU*.16	0..26	5.	1.fil	15.00Jii	D.0150>	244
Eura1 pm5m:laol:oi""S	12.11	11.26	S.18	34!!	2□-8104	0.02□8	244
ArJBophar.atelocarpa	D1:4;	11.22	::I.DS	Z.61	13.2066	D.0132	244
L.afJfllostemon mnfertus	O.IE	0.22	S.o5	1305	6.6033	O.ooE6	244
Eucat prns re-llicomis:	(U:1	II.25	S.IPII	5.655	33.ⅈ9	0.0038	244
Eucalypiu, reslnofera	D..III	II.B	2.93	:1.4/1	10.-1052	11.010I	244
P.arymhla llanryl	I1.03	0..CII	2.00	1.3C?;	2.JIi35"	0.. 27	244
Iuratyprusse.eana	004	II.CII	"f.JII	L14	1.60.	0..0B:	24
AJBophor.awoods>ena	O.	(11)J	O.	1.74	L600!!	0.0016	244
COrymbia *""""liarls	0.02	II.04	0.92	0.87	II.8004	D.OOCE	244
Eucal,iprus-iimencildes-	0.01	Ocll4	0.92	0.43.>	0.4002	0.0004	244
Eucal prn, helldon.J""	(101	II.04	D.92	0.415	0.400:1	0.0004	244
BEH:CH GH r FIIIIA.GE	I.2B..D2ia						
BE.NCHGHFF SIGNIFICANT	II&n!iD						







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 WGS 84 GDA 94	0m Mark	Zone	Easting
		56	53454
	50m Mark	Zone	Easting
			533436
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 dominant. 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 disarrima	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	

Grass species richness:			
Total number of species	3		
Scientific Name	Entolasia stricta	Common Name	
Scientific Name	Ottachloa 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	

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 Coarse 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:

Part IV- 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

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								
	Assessment Unit Area (ha)		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 REGGROWTH 12.3.11	IAU4-AU8 REGGROWTH 12.3.20	IAU4-AU9 REMNANT 12.3.11
	Regional Ecosystems		11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
	Bioregion		12.11.24	12.11.24	12.11.25	12.11.25	12.11.23	12.11.23	12.3.11 REGGROWTH	12.3.20 REGGROWTH	12.3.11
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of	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 AU ₂	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 AU ₂	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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	0m Mark	Zone	Easting	Northing
WGS 84	☐	56	534834	6906637
GDA 94	☒	Zone	Easting	Northing
	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. henryi, Eucalyptus seana 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	Corymbia 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 seana	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 dispartima	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	

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	Labelia 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 Coarse 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	NERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
10.00	10.00	5.00	5.00	5.00	2.00	0.00	0.00	7.00

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
		11. Size of patch (fragmented)

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			







Property	Impact Area Coomera Connector Stage 1	Date	8.4.21
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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.	

Site description and Location (including details of discrete polygons within the assessment unit)
Dominated by <i>Corymbia henryii</i> . Flora field sheet CC18.

Tree species richness:

Shrub species richness:

Grass species richness:

Forbs and others (non grass ground) species richness:

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

[illegible]

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

Total Length of Coarse 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:	
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Number of ecologically dominant layer species regenerating:	100
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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	NERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating	(Number of)
		2. Native plant species richness	
		- Trees	
		- Shrubs	
		- Grasses	
		- Forbs	
		3. Tree canopy height	
		- Canopy Layer	
		- Sub-Canopy Layer	
		- Emergent Layer	
		4. Tree canopy cover	
		- Canopy Layer	
		- Sub-Canopy Layer	
		- Emergent Layer	
		5. Shrub canopy cover	
		6. Native perennial grass cover	
		7. Organic litter	
		8. Large trees	
		9. Coarse woody debris (Meters)	
		10. Weed cover	
11. Size of patch (fragmented)	tes		

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
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 AU ₄	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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			







Property	Impact Area Coomera Connector Stage 1	Date	8.4.21
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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.

Site description and Location (including details of discrete polygons within the assessment unit)
Co-dominated by <i>Eucalyptus pilularis</i> and <i>Corymbia henryi</i> . Flora field sheet CC20/22.

Tree species richness:

[illegible]

Forbs and others (non grass ground) species richness:			
Total number of species	6		
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Lomandra filiformis</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	Common Name	
Scientific Name	<i>Lepidosperma laterale</i>	Common Name	
Scientific Name	<i>Goodenia rotundiflora</i>	Common Name	
Scientific Name	<i>Geodorum densiflorum</i>	Common Name	
Scientific Name		Common Name	

Total percentage cover within plot	10.00%
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[illegible]

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

Total Length of Coarse 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:

Part II- 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	IMERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
		11. Size of patch (fragmented)

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
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	0.47888889		
SCORE	5	20	10

IAU ₃ - AU ₅	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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			









Property	Impact Area Coomera Connector Stage 1	Date	19.4.21
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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.

Site description and Location (including details of discrete polygons within the assessment unit)	
	Dominated by <i>Eucalyptus pilularis</i> . Small drainage line around the 80m mark. Flora field sheet C13.

Tree species richness:			
Total number of species	7		
Scientific Name	<i>Eucalyptus pilularis</i>	Common Name	
Scientific Name	<i>Corymbia intermedia</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Lophostemon suaveolens</i>	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Allocasuarina littoralis</i>	Common Name	
Scientific Name	<i>Acacia dispartima</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

[illegible][illegible]

Forbs and others (non grass ground) species richness:			
Total number of species	5		
Scientific Name	<i>Lepidosperma laterale</i>	Common Name	
Scientific Name	<i>Dianella caerulea</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Goodenia rotundifolia</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

[illegible]

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

Total Length of Coarse 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	NERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

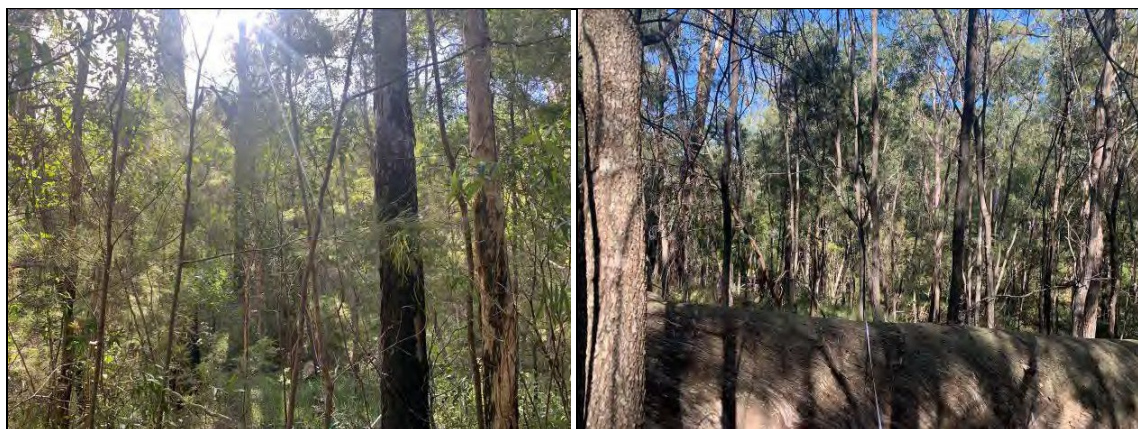
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
11. Size of patch (fragmented)	tes	

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
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

IAU ₃ - AU ₅	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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	0m Mark	Zone	Easting	Northing
WGS 84	☐	56	532493	6917493
GDA 94	☒	Zone	Easting	Northing
	50m Mark	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	

Shrub species richness:			
Total number of species	0		
Scientific Name	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	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	

Forbs and others (non grass ground) species richness:			
Total number of species	3		
Scientific Name	<i>Cyperus spp</i>	Common Name	
Scientific Name	<i>Parsonia straminea</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	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	<i>Singapore daisy</i>	Common Name	
Scientific Name	<i>Blue Billygoat Weed</i>	Common Name	
Scientific Name	<i>Columbian Waxweed</i>	Common Name	
Scientific Name	<i>Cobblers Pegs</i>	Common Name	
Scientific Name	<i>Devils Fig</i>	Common Name	
Scientific Name	<i>Cocos Palm</i>	Common Name	
Scientific Name	<i>Pigeon Grass</i>	Common Name	
Scientific Name	<i>Balloon Cotton</i>	Common Name	
Scientific Name	<i>Latona</i>	Common Name	
Scientific Name	<i>Silverleaf Desmodium</i>	Common Name	

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

Total Length of Coarse 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:

Part II- 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 ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
tes		11. Size of patch (fragmented)

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
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		59.16439588
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		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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Casuarina glauca</i>	Common Name	
Scientific Name	<i>Corymbia tessellaris</i>	Common Name	
Scientific Name	<i>Acacia dispartima</i>	Common Name	
Scientific Name	<i>Alphitonia excelsa</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Corymbia intermedia</i>	Common Name	
Scientific Name	<i>Angophora leiocarpa</i>	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	

Shrub species richness:			
Total number of species	5		
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Acacia podalyrifolia</i>	Common Name	
Scientific Name	<i>Acacia leiocalyx</i>	Common Name	
Scientific Name	<i>Callistemon salignus</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	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	<i>Themeda triandra</i>	Common Name	
Scientific Name	<i>Entolasia stricta</i>	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	<i>Parsonsia straminea</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Eustrephus latifolius</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	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	<i>Zig zag wattle</i>	Common Name	rhodes grass
Scientific Name	<i>wattle</i>	Common Name	singapore daisy
Scientific Name	<i>lantana</i>	Common Name	Elastic grass
Scientific Name	<i>passionflower</i>	Common Name	
Scientific Name	<i>asparagus fern</i>	Common Name	
Scientific Name	<i>cocos palm</i>	Common Name	
Scientific Name	<i>slash pine</i>	Common Name	
Scientific Name	<i>yucca</i>	Common Name	
Scientific Name	<i>pigeon grass</i>	Common Name	
Scientific Name	<i>paspalum/vasey grass</i>	Common Name	

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

Total Length of Coarse 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)

	Quadrat 1	Quadrat 2	Quadrat 3	Quadrat 4	Quadrat 5	Average
native perennial grass cover	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
organic litter	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

Part 1 - 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 ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part		Habitat Quality Attributes		Assessment Unit Number								
		Assessment Unit Area (ha)		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
				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
		Regional Ecosystems		Bioregion								
		Southeast Queensland		Southeast Queensland								
1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating (Number of)		100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
		2. Native plant species richness		80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
		- Trees		75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
		- Shrubs		33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
		- Grasses		41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
		- Forbs										
		3. Tree canopy height		84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
		- Canopy Layer		100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
		- Sub-Canopy Layer										
		- Emergent Layer										
es	Site Condition Attributes	4. Tree canopy cover		76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
		- Canopy Layer		25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
		- Sub-Canopy Layer										
		- Emergent Layer		98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
		5. Shrub canopy cover		10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
		6. Native perennial grass cover		212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
		7. Organic litter		33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
		8. Large trees		99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
		9. Coarse woody debris (Meters)		3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
		10. Weed cover										
		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

IAU ₄ - AU8	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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	0m Mark	Zone	Easting	Northing
WGS 84	☐ ☒	56	533689	6909494
GDA 94		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	<i>Eucalyptus tereticornis</i>	Common Name	
Scientific Name	<i>Eucalyptus microcarps</i>	Common Name	
Scientific Name	<i>Casuarina glauca</i>	Common Name	
Scientific Name	<i>Eucalyptus siderophloia</i>	Common Name	
Scientific Name	<i>Acacia dispartima</i>	Common Name	
Scientific Name	<i>Acacia melanoxylon</i>	Common Name	
Scientific Name	<i>Callistemon salignus</i>	Common Name	
Scientific Name	<i>Melaleuca quinquenervia</i>	Common Name	
Scientific Name	<i>Lophostemon confertus</i>	Common Name	
Scientific Name	<i>Myrsine variabilis</i>	Common Name	

Shrub species richness:			
Total number of species	7		
Scientific Name	<i>Ficus watkinsiana</i>	Common Name	
Scientific Name	<i>Breynia oblongifolia</i>	Common Name	
Scientific Name	<i>Macaranga tanarius</i>	Common Name	
Scientific Name	<i>Glochidion sumatranum</i>	Common Name	
Scientific Name	<i>Cryptocarya triplinervis</i>	Common Name	
Scientific Name	<i>Leptospermum polygalifolium</i>	Common Name	
Scientific Name	<i>Cupaniopsis anacardioides</i>	Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	
Scientific Name		Common Name	

Grass species richness:			
Total number of species	3		
Scientific Name	<i>Oplismenus aemulus</i>	Common Name	
Scientific Name	<i>Ottocloa gracillima</i>	Common Name	
Scientific Name	<i>Themeda triandra</i>	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	<i>Goodenia rotundifolia</i>	Scientific Name	<i>Persicaria attenuata</i>
Scientific Name	<i>Maclura cochinchinensis</i>	Scientific Name	<i>Pseuderanthemum variabile</i>
Scientific Name	<i>Parsonia straminea</i>	Common Name	
Scientific Name	<i>Lobelia purpurascens</i>	Common Name	
Scientific Name	<i>Lomandra longifolia</i>	Common Name	
Scientific Name	<i>Hardenbergia violacea</i>	Common Name	
Scientific Name	<i>Smilax australis</i>	Common Name	

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

Total percentage cover within plot	25.00%		
Scientific Name	<i>Mangifera indica</i>	Scientific Name	<i>Solanum nigrum</i>
Scientific Name	<i>Lantana camara</i>	Scientific Name	<i>Asparagus virgatus</i>
Scientific Name	<i>Passiflora suberosa</i>	Common Name	
Scientific Name	<i>Ageratina adenophora</i>	Common Name	
Scientific Name	<i>Senna pendula var. glabrata</i>	Common Name	
Scientific Name	<i>Ageratum houstonianum</i>	Common Name	
Scientific Name	<i>Setaria sphacelata</i>	Common Name	
Scientific Name	<i>Senecio madagascariensis</i>	Common Name	
Scientific Name	<i>Cuphea carthagenensis</i>	Common Name	
Scientific Name	<i>Solanum torvum</i>	Common Name	

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

Total Length of Coarse 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	NERA CONNECTOR. IMPACT SITE KOALA HABITAT QUALITY ASSESSMENT.
Total Area	78.811

SITE ASSESSMENT BENCHMARK COMPARISON RESULTS

Part	Habitat Quality Attributes
	Assessment Unit Area (ha)
	Regional Ecosystems
	Bioregion

1	Site Condition Attributes	1. Recruitment of woody perennial species ecologically dominant layers regenerating) (Number of
		2. Native plant species richness
		- Trees
		- Shrubs
		- Grasses
		- Forbs
		3. Tree canopy height
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		4. Tree canopy cover
		- Canopy Layer
		- Sub-Canopy Layer
		- Emergent Layer
		5. Shrub canopy cover
		6. Native perennial grass cover
		7. Organic litter
		8. Large trees
		9. Coarse woody debris (Meters)
		10. Weed cover
tes		11. Size of patch (fragmented)

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
11.66	11.66	10.045	10.045	7.655	7.655	3.347	3.347	3.347
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
Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland	Southeast Queensland
100.00%	100.00%	75.00%	100.00%	100.00%	100.00%	33.00%	100.00%	100.00%
80.00%	60.00%	185.71%	100.00%	56.25%	43.75%	28.57%	250.00%	142.86%
75.00%	62.50%	62.50%	75.00%	27.27%	36.36%	0.00%	125.00%	100.00%
33.33%	33.33%	44.44%	33.33%	100.00%	100.00%	0.00%	100.00%	25.00%
41.18%	47.06%	76.92%	69.23%	33.33%	27.78%	12.00%	50.00%	32.00%
84.62%	84.62%	90.91%	100.00%	67.74%	77.42%	78.26%	100.00%	95.65%
100.00%	100.00%	111.11%	88.89%	70.00%	120.00%	100.00%	125.00%	150.00%
76.39%	92.08%	91.00%	114.75%	111.60%	79.00%	32.14%	18.57%	91.96%
25.58%	37.91%	1046.00%	640.00%	54.55%	90.91%	24.24%	415.00%	109.09%
98.57%	94.29%	395.00%	417.50%	83.33%	52.78%	0.00%	52.00%	62.50%
10.77%	16.92%	82.00%	11.00%	106.67%	190.00%	0.00%	25.00%	70.91%
212.89%	207.56%	128.62%	146.77%	145.00%	133.93%	32.43%	256.67%	98.38%
33.33%	90.91%	165.22%	269.57%	135.71%	85.71%	6.67%	18.79%	53.33%
99.08%	86.08%	470.00%	1260.00%	178.13%	264.58%	3.60%	22.47%	10.81%
3.00%	5.00%	2.00%	1.00%	10.00%	2.00%	95.00%	10.00%	25.00%
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

IAU ₄ - AU ₉	GHFF FORAGING TREE FLOWER SCORE	T ₁ 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 12.11.24				Plot 1				Plot 2				Average % benchmark		Average Score	Benchmark 12.11.25				Plot 3				Plot 4				Average % benchmark		Average Score	Benchmark 12.11.23				Plot 5				Plot 6				Average % benchmark		Average Score	Benchmark 12.3.11				Plot 7				Benchmark 12.3.20				Plot 8				Benchmark 12.3.11				Plot 9				Average % benchmark		Average Score																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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