28ºS ENVIRONMENTAL

Ripley View Residential Subdivision

Preliminary Documentation Report

EPBC Referral 2020/8615

VOLUME 8 – APPENDICES 29-35

23/02/2024 - *version 7.1*

Report prepared for Arxhe Ripley View Investment Trust

Appendix 29

Weed Assessment
Baseline Assessment for the Offset Site

Appendix 29 – Prominent Weeds Present

29.1 - Preamble

Prominent weed data has been collated and synthesised from two data collection methodologies, specifically:

- Bio-Condition transects (500 m^2 sample area)
- 50m x 50m plot assessments (2,500 m^2 sample area).

The locations of Biocondition transects and 50 x 50m Quadrats are shown in the figures attachment**.**

A total of 48 unique plot sites were assessed. A summary of the biocondition plot and quadrats deployed and their relationship with Assessment Units, remnant vegetation and regulated vegetation status is shown in the following two tables.

Biocondition Sites

AU	Description	Reg Veg Status	Pre-clear RE	Biocon-Sites	
				East	West
1a	Remnant 12.9-10.2	Cat B	12.9-10.2	3, 4	n/a
1b	Regrowth 12.9-10.2	Cat R	12.9-10.2	1, 2	11, 12, 13
2	Young regrowth 12.9-10.2	Cat X	12.9-10.2	14, 15, 18	5, 7, 9
3	Pastural grassland	Cat X	12.9-10.2	16, 17, 19	6, 8, 10

50 x 50m Assessment Quadrats

AU	Description	Reg Veg Status	Pre-clear RE	50 x 50m Plots	
				East	West
2	Young regrowth 12.9-10.2	Cat X	12.9-10.2	1019, 1103, 1229, 1255, 1534	62, 195, 277, 603, 658, 792, 843
3	Pastural grassland	Cat X	12.9-10.2	1010, 1098, 1101, 1124, 1154, 1201, 1361, 1495, 1504, 1637	417, 466, 496, 501, 770, 788, 879

On account of the comparatively small size of patches comprising AU1 and observed variability of regrowth within AU2 and 3, quadrats were only deployed in areas of young regrowth / pastural grassland.

In the field, three qualitative measures of abundance were applied, being (rankled from lowest to highest); occasionally found (O), commonly found (C) and abundant (A).

Three Weeds of National Significance (WoNS) are present on site:

- *Lantana camara* (lantana) occurring as isolated individual and thickets in all Assessment Units (AU1-3). Abundance measures range from common to abundant, with highest densities in AU3, found in 46 locations (96% of sample sites).
- *Opuntia stricta* (prickly pear) occurs as isolated individuals, occasionally encountered in AU1b, and occasionally to commonly found in AU3, found in 9 location (19% of sample plots).

- *Senecio madagascariensis* (fire weed) which is sparsely distributed and occasionally encountered four locations within the Eastern portion of the offset area (AU1a, AU2 and AU3) (8% of sample sites).
- *Opuntia tomentosa* (velvety tree pear) was found at one location (occasional) in AU2, found at 1 location (2% of sample sites).

29.2 - ASSESSMENT UNIT 1a (AU1a): Remnant (RE12.9-10.2)

Exotic species	Common Name	Eastern Site		Biosecurity Act 2014	Weed of National Significance
		Site 3	Site 4		
Lantana camara	**Lantana**	**C**	**C**	**Category 3**	**Y**
Melinis repens	Red Natal grass	A	O		
Cynodon dactylon	Green couch	C	C		
Emilia sonchifolia	Lilac tasselflower	O	O		
Senecio madagascariensis	**Fireweed**		**O**	**Category 3**	**Y**
Gamochaeta coarctata	Gray everlasting		O		

Key: not identified within plot (-), occasionally appears in plot (O), commonly identified in plot (C), abundant within plot (A)

29.3 - ASSESSMENT UNIT 1b (AU1b): Regrowth (RE12.9-10.2)

Exotic Species	Common Name	Eastern Site		Western Site			Biosecurity Act 2014	Weed of National Significance
		Site 1	Site 2	Site 11	Site 12	Site 13		
Chamaecrista rotundifolia	Round-leaf cassia	O	O	O	O			
Cynodon dactylon	Bermuda grass		C					
Emilia sonchifolia	Lilac tasselflower	Rare						
Gamochaeta coarctata	Gray everlasting		O					
Heliotropium amplexicaule	Heliotropium		O		O		-	
Lantana camara	**Lantana**	**C**	**C**	**C**	**C**	**C**	**Category 3**	**Y**
Lantana montevidensis	**Creeping lantana**	**-**	**-**			**C**	**Category 3**	
Melinis repens	Red natal grass	A	A	A	C	C	-	
Opuntia stricta	**Prickly pear**			**O**			**Category 3**	**Y**
Praxelis clematidea	Praxelis					O	-	
Richardia brasiliensis	White eye		O				-	
Senecio madagascariensis	**Fireweed**						**Category 3**	**Y**
Verbena rigida	Slender vervain			O	O	O	-	-

Key: occasionally appears in plot (O), commonly identified in plot (C), abundant within plot (A)

29.4 - ASSESSMENT UNIT 2 (AU2): Young Regrowth (RE12.9-10.2)

Exotic Species	Common Name	Eastern Site								Western Site										Biosecurity Act 2014	Weed of National Significance
		Biocondition			Quadrats					Biocondition			Quadrats								
		14	15	18	1019	1103	1229	1255	1534	5	7	9	62	195	277	603	658	792	843		
Ageratum houstonianum	Blue billygoat	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-		
Aster subulatus	Wild aster	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-		
Bidens pilosa	Farmers friends	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-		
Chamaecrista rotundifolia	Round-leaf cassia	-	-	-	-	O	-	-	-	-	C	O	O	O	-	-	-	-	-		
Conyza sumatrensis	Tal fleabane	-	-	-	-	-	O	-	-	-	-	-	-	-	C	C	C	C	-		
Cynodon dactylon	Bermuda grass	-	C	C	-	C	-	O	O	-	-	-	-	-	-	-	-	-	-		
Cyperus aggregatus	Inflatedscale flatsedge	-	-	-	-	O	-	-	-	-	C	-	-	-	-	-	-	-	-		
Emilia sonchifolia	Lilac tasselflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Erigeron bonariensis	Flax-leaved fleabane	-	-	-	-	-	-	O	-	-	-	-	O	-	-	-	-	-	-		
Gamochaeta coarctata	Gray everlasting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gomphocarpus physocarpus	Balloon cotton bush	-	O	O	-	-	O	-	-	-	-	-	-	C	A	C	C	C	-		
Heliotropium amplexicaule	Heliotropium	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-		
Indigofera spicata	Creeping indigo	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-		
Lantana camara	**Lantana**	**C**	**C**	**C**	**O**	**C**	**-**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**O**	**C**	**C**	**C**	**O**	**Category 3**	**Y**
Lantana montevidensis	**Creeping lantana**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	
Melinis repens	Red natal grass	A	A	A	C	C	A	C	C	A	A	C	A	A	C	A	A	A	O	-	
Opuntia stricta	**Prickly pear**	**-**	**O**	**O**	**-**	**-**	**O**	**-**	**-**	**-**	**O**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	**Y**
Opuntia tomentosa	**Velvety tree pear**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	**Y**
Praxelis clematidea	Praxelis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Richardia brasiliensis	White eye	-	-	-	-	O	-	O	-	-	-	-	-	-	-	-	-	-	-		
Senecio madagascariensis	**Fireweed**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	**Y**
Solanum linnaeanum	Devil's apple	-	-	-	-	-	O	-	-	-	-	-	-	O	O	O	C	-	-		
Sporobolus natalensis	**Giant rat's tail grass**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	
Verbena rigida	Slender vervain	-	-	-	-	-	O	O	-	C	C	O	O	O	O	C	C	O	-		

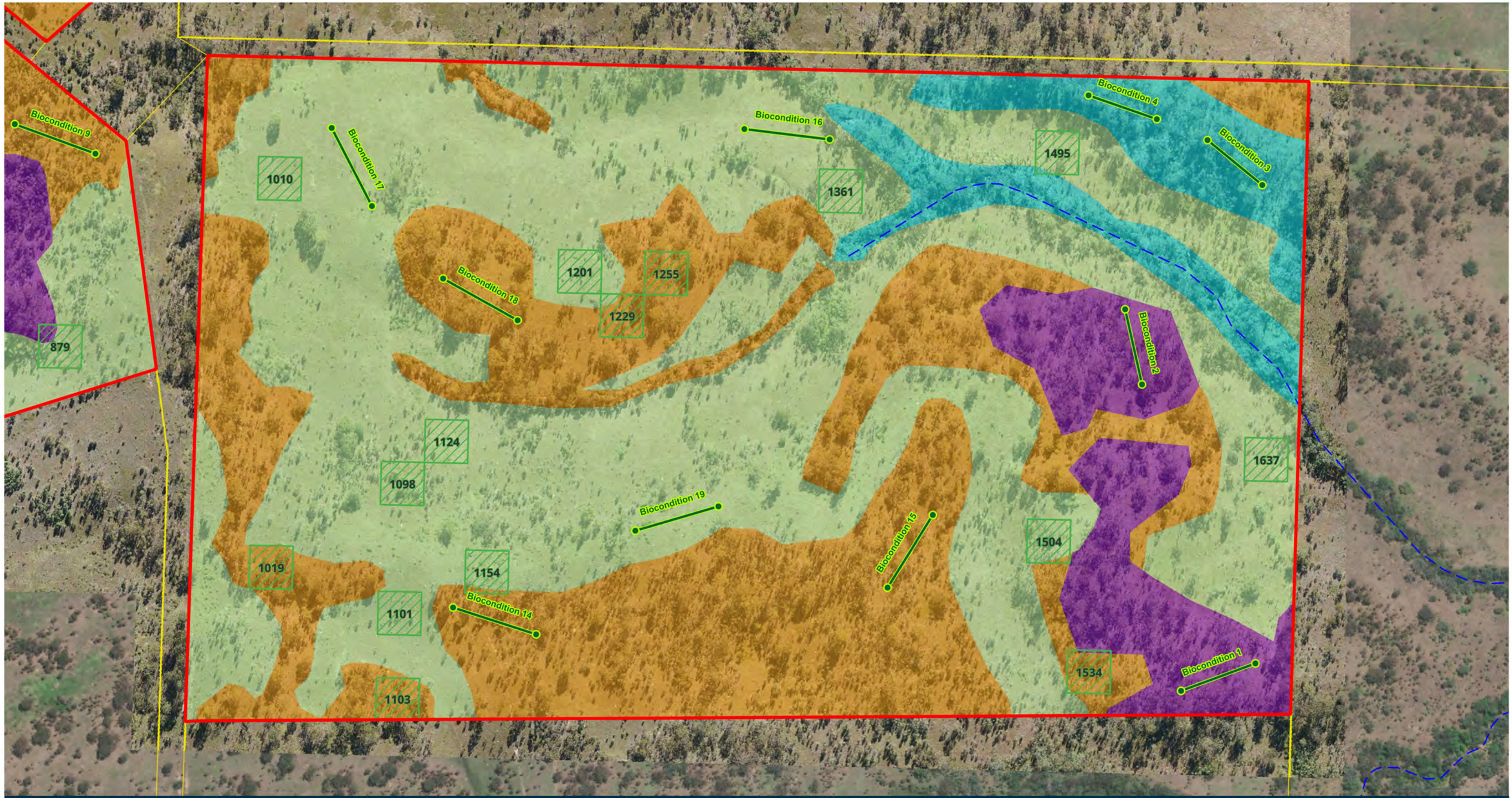
Key: not identified within plot (-), occasionally appears in plot (O), commonly identified in plot (C), abundant within plot (A)

29.5 - ASSESSMENT UNIT 3 (AU3)

Exotic Species	Common Name	Eastern Site													Western Site										Biosecurity Act 2014	Weed of National Significance
		Biocondition			Quadrats										Biocondition			Quadrats								
		16	17	19	1010	1098	1101	1124	1154	1201	1361	1495	1504	1637	6	8	10	417	466	496	501	770	788	879		
Ageratum houstonianum	Blue billygoat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Aster subulatus	Wild aster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-	-		
Bidens pilosa	Farmers friends	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Chamaecrista rotundifolia	Round-leaf cassia	-	-	-	-	O	-	-	-	-	-	-	-	-	C	C	C	O	-	-	O	-	-	O		
Conyza sumatrensis	Tal fleabane	-	-	-	-	-	-	-	O	C	-	-	-	-	-	-	-	-	O	O	-	-	A	-		
Cynodon dactylon	Bermuda grass	C	C	C	O	O	A	O	C	C	C	O	O	C	-	-	C	-	-	-	-	-	-	-		
Cyperus aggregatus	Inflatedscale flatsedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cyperus brevifolius	Mullumbimby couch	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cyperus rotundifolia	Nutgrass	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cyperus sesquiflorus	Kyllinga weed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	-	-	-	-	-	-		
Emilia sonchifolia	Lilac tasselflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Erigeron bonariensis	Flax-leaved fleabane	-	-	-	-	-	-	O	-	-	O	-	-	-	C	C	C	-	-	-	-	-	-	O		
Gamochaeta coarctata	Gray everlasting	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Gomphocarpus physocarpus	Balloon cotton bush	O	-	-	O	O	-	-	O	C	-	-	-	-	O	-	C	-	C	O	C	-	C	-		
Gomphrena celosioides	Gomphrena weed	-	-	O	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Heliotropium amplexicaule	Heliotropium	O	O	-	-	-	-	-	-	-	O	-	-	-	O	O	-	-	-	-	-	-	-	-		
Indigofera spicata	Creeping indigo	-	-	-	-	O	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lantana camara	**Lantana**	**-**	**-**	**O**	**C**	**A**	**A**	**A**	**A**	**C**	**A**	**A**	**C**	**A**	**O**	**C**	**O**	**O**	**O**	**C**	**A**	**O**	**A**	**O**	**Category 3**	**Y**
Lantana montevidensis	**Creeping lantana**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	
Macroptilium atropurpureum	Siratro	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-		
Melinis repens	Red natal grass	A	A	A	C	-	A	C	A	A	A	A	A	A	A	A	A	O	C	A	A	C	A	C		
Opuntia stricta	**Prickly pear**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**C**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**-**	**-**	**-**	**Category 3**	**Y**
Opuntia tomentosa	**Velvety tree pear**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**C**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	**Y**
Praxelis clematidea	Praxelis	-	-	-	-	O	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Richardia brasiliensis	White eye	-	-	-	-	C	O	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-		
Senecio madagascariensis	**Fireweed**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**Category 3**	**Y**

Key: not identified within plot (-), occasionally appears in plot (O), commonly identified in plot (C), abundant within plot (A)

Figures



Ripley View Residential Subdivision
Offset Management Strategy

Appendix S.2.1 - Eastern ORS Recruitment Data Collection

28 South Project Ref: 2018-079C

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

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Legend

- Site Boundary
- Cadastre
- Waterway
- 50x50m Assessment Plot
- MHQA Assessment Site

Eastern Assessment Units

- AU1a - Remnant (RE12.9-10.2)
- AU1b - High Value Regrowth (RE12.9-10.2)
- AU2 - Young Regrowth (preclear RE12.9-10.2)
- AU3 - Pastural Grassland (preclear RE12.9-10.2)

Issue Date	Dwg No.	Author
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Approved	**Revision Note**	
WM		

(A3) GDA 2020 MGA 56
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0 100 200 300 m

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Ripley View Residential Subdivision
Offset Management Strategy

Appendix S.2.2 - Western ORS Recruitment Data Collection

28 South Project Ref: 2018-079C

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

Legend

- Site Boundary
- Cadastre
- Waterway
- 50x50m Assessment Plot
- MHQA Assessment Site
- Farm Dam

Western Assessment Units

- AU1b - High Value Regrowth (RE12.9-10.2)
- AU2 - Young Regrowth (preclear RE12.9-10.2)
- AU3 - Pastural Grassland (preclear RE12.9-10.2)

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AD		

(A3) GDA 2020 MGA 56
1:4,600

0 100 200 300 m

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Appendix 30

Baseline Fauna Camera Trapping at the Offset Site

Appendix 30 – Fauna Species Presence – Camera Traps

30.1 Preamble

Terrestrial / arboreal (non-avian) fauna species data presented herein was collated from site observation and camera trapping at 25 locations on the site (see attached **Figure**). Camera traps distributed throughout both the eastern and western portions of the ORS from the 19th of June to the 5th of July (375 trap nights). Weather during this period was fine and mild with temperatures ranging ~5°C (overnight) to low 20's during daytime.

30.2 Exotic/ Invasive Species

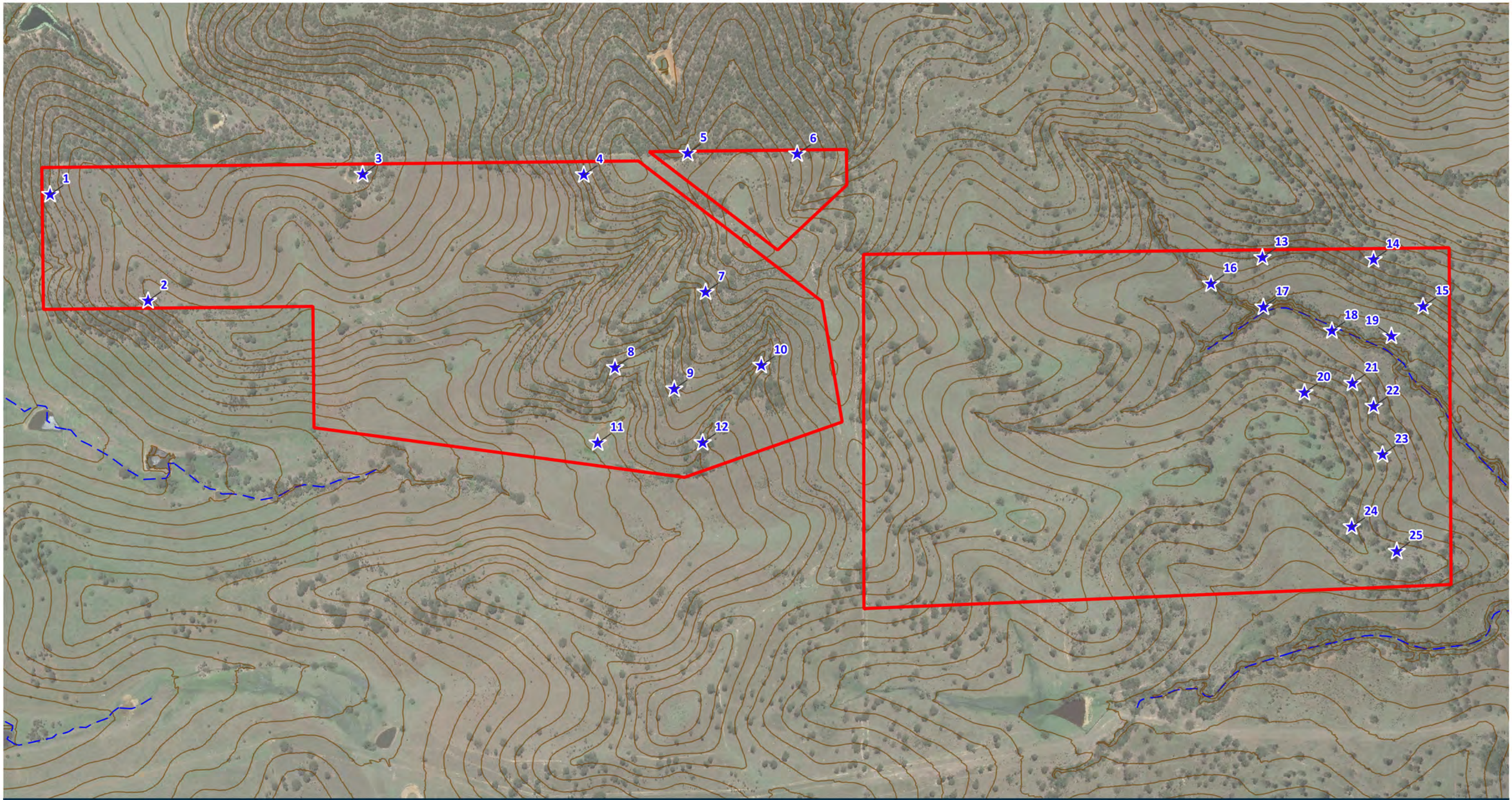
Binomial name	Common name	Pest status	How recorded	Camera Sites / locations recorded	Measure (% of total Camera trap locations)
Bos taurus	cattle	n/a (domesticated)	camera	13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25	48%
Canis lupis familaris	wild dog	Restricted	calls, obs, camera	1, 4, 5, 11	16%
Cervus elaphus	red deer	Restricted	obs		n/a
Cervus timorensis	rusa deer	Restricted	camera	13, 17	8%
Felis cattus	feral cat	Restricted	obs		
Lepus capensis	European hare	Invasive	camera	3, 11, 21, 24	16%
Rattus rattus	black rat	Invasive	camera	12, 14, 15, 16, 17	20%
Rhinella marina	cane toad	Invasive	observation	farm dams	
Sus scrofa	wild pig	Restricted	Tracks, scats	scats surrounding dams (western site)	
Vulpes vulpes	fox	Restricted	camera	1, 4, 11, 12	16%

30.3 Endemic Species

Binomial name	Common name	Nature Conservation (Animals) Regulation 2020	How recorded	Camera Sites recorded
Aepyprymnus rufescens	rufous bettong	LC	camera	1, 2, 3, 4, 5, 7, 9, 10, 13, 14, 15, 21, 22, 24, 25
Antechinus flavipes flavipes	yellow-footed antechinus	LC	camera	5. 14, 15
Dacelo novaeguineae	kookaburra	LC	camera	4
Isoodon macrourus	northern brown bandicoot	LC	camera	4, 11, 12, 17, 18
Macropus rufogriseus	red-necked wallaby	LC	camera	2, 3, 5
Perameles nasuta	long-nosed bandicoot	LC	camera	1, 2, 3, 5, 7, 8, 9, 10, 11, 13, 14, 16, 19, 22
Phascogale tapoatafa	brush-tailed phascogale	LC	camera	5, 7, 9, 14, 15, 16
Podargus strigoides	tawny frogmouth	LC	camera	12
Tachyglossus aculeatus	short-beaked echidna	SLC	camera	13
Trichosurus vulpecula	brushtail possum	LC	camera	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25

Notes: least concern (LC), special least concern (SLC)

Figure



Ripley View Residential Subdivision

Legend

- Offset Receiving Site Boundary
- Waterway
- Property Boundaries
- Contour (1m)

Camera Trap Locations

28 South Project Ref: 2018-079C

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

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(A3) GDA 2020 MGA 56

1:8,000

0 100 200 300 m

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Appendix 31

Modified Habitat Quality Assessment for Koala at the Offset Site

Appendix 31.1

MHQA Data Sheet - Baseline

OFFSET - KOALA Baseline

Assessment Unit - Regional Ecosystem	AU 1 - Remnant and High Value Regrowth RE12.9-10.2																						
		AU1a - Remnant						AU1b - High Value Regrowth															
Site Reference	Benchmark	Site 3			Site 4			Site 1			Site 2			Site 11			Site 12			Site 13			Average	Average
	12.9-10.2	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	%	Score
Site Condition																								
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	2	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	5	83%	2.5	3	50%	2.5	5	83%	2.5	5	83%	2.5	5	83%	2.5	100%	3.2
Native plant species richness - shrubs	7	6	86%	2.5	5	71%	2.5	6	86%	2.5	3	43%	2.5	8	114%	5	5	71%	2.5	9	129%	5	86%	3.2
Native plant species richness - grasses	7	6	86%	2.5	7	100%	5	10	143%	5	10	143%	5	11	157%	5	11	157%	5	8	114%	5	86%	4.6
Native plant species richness - forbes	13	14	108%	5	33	254%	5	18	138%	5	19	146%	5	18	138%	5	23	177%	5	21	162%	5	108%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	16.3	98%	5	18.4	112%	5	15.5	94%	5	18.5	112%	5	16.5	100%	5	16	97%	5	17.5	106%	5	98%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	45.6	109%	5	41.1	98%	5	32.0	76%	5	28.6	68%	5	38.3	91%	5	47.4	113%	5	39.3	94%	5	109%	5.0
Shrub canopy cover	6	11.9	198%	5	13.3	222%	3	7	117%	5	6.9	115%	5	2.6	43%	3	10.5	175%	5	2.5	42%	3	198%	4.1
Native grass cover	21	22	105%	5	11.8	56%	1	19	90%	3	23	110%	5	22	105%	5	9.4	45%	1	21	100%	5	105%	3.6
Organic litter	48	40.4	84%	5	50	104%	5	56	117%	5	40.2	84%	5	18.4	38%	3	60.4	126%	5	37.2	78%	5	84%	4.7
Large trees (euc plus non-euc)	38	30	79%	10	32	84%	10	28	74%	10	38	100%	10	22	58%	10	14	37%	5	14	37%	5	79%	8.6
Coarse woody debris	506	160	32%	2	280	55%	5	460	91%	5	430	85%	5	42	8%	0	60	12%	2	60	12%	2	32%	3.0
Non-native plant cover	0	60		0	35		3	25		5	70		0	35		3	20		5	30		3		2.7
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Site Condition Score				77			79.5			83			80			76.5			73			75.5		77.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.31**			**2.39**			**2.49**			**2.40**			**2.30**			**2.19**			**2.27**		**2.33**
Site Context																								
Size of patch	10	>200 ha		2			2			10			10			0			0			10		4.9
Connectedness	5	24%		2			2			2			2			2			2			2		2.0
Context	5	17.54%		2			2			2			2			2			2			2		2.0
Ecological Corridors	6			0			0			0			0			0			0			0		0.0
Role of site location to species overall population in the state	5			5			5			5			5			5			5			5		5.0
Threats to the species	15			7			7			7			7			7			7			7		7.0
Species mobility capacity	10			10			10			10			10			10			10			10		10.0
Site Context Score				28			28			36			36			26			26			36		30.9
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.50**			**1.50**			**1.93**			**1.93**			**1.39**			**1.39**			**1.93**		**1.65**

Assessment Unit - Regional Ecosystem	AU2 - Young Regrowth – preclear RE12.9-10.2																			
Site Reference	Benchmark	Site 5			Site 7			Site 9			Site 14			Site 15			Site 18			Average	Average
		Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	%	Score
Site Condition																					
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5	100	100%	5	4	100%	5	3	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5.0	3	50%	2.5	3	50%	2.5	4	67%	2.5	5	83%	2.5	2	33%	2.5	100%	2.9
Native plant species richness - shrubs	7	3	43%	2.5	2	29%	2.5	3	43%	2.5	5	71%	2.5	7	100%	5	4	57%	2.5	43%	2.9
Native plant species richness - grasses	7	14	200%	5	6	86%	2.5	12	171%	5	8	114%	5	9	129%	5	6	86%	2.5	200%	4.2
Native plant species richness - forbes	13	19	146%	5	15	115%	5	27	208%	5	13	100%	5	21	162%	5	21	162%	5	146%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	15.5	94%	5	8	48%	3	21.8	132%	5	8	48%	3	14.3	87%	5	14.5	88%	5	94%	4.3
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	28.4	68%	5	4.9	12%	2	9.8	23%	2	9.0	21%	2	18.8	45%	2	28.8	69%	5	68%	3.0
Shrub canopy cover	6	3	50%	3	0	0%	0	0.7	12%	3	1.5	25%	3	1	17%	3	2.5	42%	3	50%	2.5
Native grass cover	21	23.2	110%	5	8	38%	1	30.6	146%	5	69.6	331%	5	18	86%	3	20	95%	5	110%	4.0
Organic litter	48	22.4	47%	3	22	46%	3	36.2	75%	5	14	29%	3	38	79%	5	21	44%	3	47%	3.7
Large trees (euc plus non-euc)	38	4	11%	5	0	0%	0	0	0%	0	10	26%	5	16	42%	5	32	84%	10	11%	4.2
Coarse woody debris	506	280	55%	5	4	1%	0	760	150%	5	450	89%	5	265	52%	5	20	4%	0	55%	3.3
Non-native plant cover	0	40		3	60		0	30		3	5		5	10		5	25		5		3.5
Quality and availability of food and foraging habitat	N/A	5		5	5		1	1		1	1		1	5		5	5		5		3.0
Quality and availability of shelter	N/A	5		5	5		1	1		1	1		1	1		1	5		5		2.3
Site Condition Score				66.5			28.5			50			53			61.5			63.5		53.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.00**			**0.86**			**1.50**			**1.59**			**1.85**			**1.91**		**1.62**
Site Context																					
Size of patch	10	>200 ha		10			2			10			0			0			0		3.7
Connectedness	5	24%		2			2			2			2			2			2		2
Context	5	17.54%		2			2			2			2			2			2		2
Ecological Corridors	6			0			0			0			0			0			0		0
Role of site location to species overall population in the state	5			5			5			5			5			5			5		5
Threats to the species	15			7			7			7			7			7			7		7
Species mobility capacity	10			7			7			7			7			7			7		7
Site Context Score				33			25			33			23			23			23		26.7
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.77**			**1.34**			**1.77**			**1.23**			**1.23**			**1.23**		**1.43**

Assessment Unit - Regional Ecosystem	AU 3 - Pastural Grassland – preclear RE12.9-10.2																					
Site Reference	Benchmark	Site 6			Site 8			Site 10			Site 16			Site 17			Site 19			Average	Average	Total average %	Total average
		Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	%	Score	benchmark	score
Site Condition																							
Recruitment of woody perennial species in EDL	100	0	0%	0	0	0%	0	0	0%	0	2	100%	5	0	0%	0	1	100%	5	33%	1.7	78%	3.9
Native plant species richness - trees	6	4	67%	2.5	0	0%	0	2	33%	2.5	2	33%	2.5	0	0%	0	1	17%	0	25%	1.3	75%	2.5
Native plant species richness - shrubs	7	0	0%	0	0	0%	0	0	0%	0	3	43%	2.5	1	14%	0	0	0%	0	124%	0.4	84%	2.2
Native plant species richness - grasses	7	1	14%	0	6	86%	3	8	114%	5	7	100%	5	4	57%	2.5	3	43%	2.5	69%	2.9	118%	3.9
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5	16	123%	5	9	69%	2.5	7	54%	2.5	110%	4.2	121%	4.7
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	0.0	0%	0	9.0	55%	3	0.0	0%	0	8.5	52%	3	4.0	24%	0	0	0%	0	22%	1.0	71%	3.4
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	0	0%	0	1.7	4%	0	0	0%	0	6.5	15%	2	0.5	1%	0	0	0%	0	3%	0.3	60%	2.8
Shrub canopy cover	6	3.6	60%	5	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	10%	0.8	86%	2.5
Native grass cover	21	18.8	90%	3	27	129%	5	16.4	78%	3	0	0%	0	28	133%	5	18	86%	3	86%	3.2	100%	3.6
Organic litter	48	12.2	25%	3	12.8	27%	3	6	13%	3	16	33%	3	5	10%	3	1	2%	0	18%	2.5	50%	3.6
Large trees (euc plus non-euc)	38	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0%	0.0	30%	4.2
Coarse woody debris	506	0	0%	0	2	0%	0	0	0%	0	0	0%	0	0	0%	0	20	4%	0	1%	0.0	29%	2.1
Non-native plant cover	0	65		0	60		0	50		3	50		3	55		3	50		3	0%	2.0	0%	2.7
Quality and availability of food and foraging habitat	N/A	1		1	1		1	1		1	1		1	1		1	1		1		1.0	0%	4.7
Quality and availability of shelter	N/A	1		1	1		1	1		1	1		1	1		1	1		1		1.0	0%	4.4
Site Condition Score				21			21			24			33			18			18		22.3		51.3
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*		*100*
Site Condition Score - out of 3				**0.62**			**0.62**			**0.71**			**0.99**			**0.54**			**0.54**		**0.67**		**1.54**
Site Context																							
Size of patch	10	>200 ha		10			10			10			10			10			10		10		6.2
Connectedness	5	24%		2			2			2			2			2			2		2		2.0
Context	5	17.54%		2			2			2			2			2			2		2		2.0
Ecological Corridors	6			0			0			0			0			0			0		0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4		4.7
Threats to the species	15			4			4			4			4			4			4		4		6.0
Species mobility capacity	10			4			4			4			4			4			4		4		7.0
Site Context Score				26			26			26			26			26			26		16		28
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*		*56*
Site Context Score - out of 3				**1.39**			**1.39**			**1.39**			**1.39**			**1.39**			**1.39**		**0.86**		**1.49**

Species Stocking Rate (SSR)							AU1	AU2	AU3	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10	10	10	
		No	Yes - adjacent		Yes - on site					
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15	15	15	
		Not habitat	Dispersal	Foraging	Breeding					
Approximate density (per ha)	Score	0	10	20	30		10	10	10	
		0%	low	medium	high					
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15	5	5	5	
		0	5 - 15	20 - 35		40 - 45				
Total SRR score (out of 70)							40	40	40	
SRR Score (out of 4)							**2.3**	**2.3**	**2.3**	

***SSR Supplementary Table**				AU1	AU2	AU3	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 3)	2.33	1.62	0.67		1.54
Site Context Score (out of 3)	1.65	1.43	0.86		1.31
Species Stocking Rate Score (out of 4)	2.29	2.29	2.29		2.29
Habitat Quality score (out of 10)	*6.27*	*5.33*	*3.81*		*5.14*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.32	184.32	184.32		184.32
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***0.96***	***2.06***	***1.76***		***4.77***

28ºS ENVIRONMENTAL

Appendix 31.2

MHQA Data Sheet

20 years with offset

OFFSET - KOALA yr 20 with offset

AU 1 - Remnant and High Value Regrowth RE12.9-10.2 (AU1a - Remnant: Site 3, Site 4; AU1b - High Value Regrowth: Site 1, Site 2, Site 11, Site 12, Site 13)

Assessment Unit - Regional Ecosystem / Site Reference	Benchmark 12.9-10.2	Site 3 Raw Data	Site 3 Benchmark	Site 3 Score	Site 4 Raw Data	Site 4 Benchmark	Site 4 Score	Site 1 Raw Data	Site 1 Benchmark	Site 1 Score	Site 2 Raw Data	Site 2 Benchmark	Site 2 Score	Site 11 Raw Data	Site 11 Benchmark	Site 11 Score	Site 12 Raw Data	Site 12 Benchmark	Site 12 Score	Site 13 Raw Data	Site 13 Benchmark	Site 13 Score	Average %	Average Score
Site Condition																								
Recruitment of woody perennial species in EDL	**100**	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	2	100%	5	100%	5.0
Native plant species richness - trees	**6**	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	100%	5.0
Native plant species richness - shrubs	**7**	7	100%	5	6	86%	5	7	100%	5	7	100%	5	8	114%	5	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	**7**	9	129%	5	10	143%	5	12	171%	5	10	143%	5	13	186%	5	13	186%	5	9	129%	5	129%	5.0
Native plant species richness - forbes	**13**	16	123%	5	34	262%	5	20	154%	5	19	146%	5	20	154%	5	24	185%	5	22	169%	5	123%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	**16.5**	18.5	112%	5	20.8	126%	5	18.9	115%	5	22	133%	5	21	127%	5	20.4	124%	5	22	133%	5	112%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	**42**	49.0	117%	5	45.0	107%	5	40.0	95%	5	38.0	90%	5	43	102%	5	54	129%	5	45	107%	5	117%	5.0
Shrub canopy cover	**6**	11	183%	5	10	167%	5	11.3	188%	5	12	200%	5	6	100%	5	13	217%	5	5.2	87%	5	183%	5.0
Native grass cover	**21**	30	143%	5	23	110%	5	31	148%	5	35	167%	5	33	157%	5	24	114%	5	32	152%	5	143%	5.0
Organic litter	**48**	52	108%	5	65	135%	5	65	135%	5	52	108%	5	38	79%	5	75	156%	5	50	104%	5	108%	5.0
Large trees (euc plus non-euc)	**38**	37	97%	10	40	105%	15	39	103%	15	43	113%	15	27	71%	10	20	53%	10	20	53%	10	97%	12.1
Coarse woody debris	**506**	426	84%	5	480	95%	5	510	101%	5	514	102%	5	335	66%	5	402	79%	5	354	70%	5	84%	5.0
Non-native plant cover	**0**	25		5	4		10	4		10	35		3	15		5	4		10	10		5		6.9
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Site Condition Score				90			100			100			93			90			95			90		94.0
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.70**			**3.00**			**3.00**			**2.79**			**2.70**			**2.85**			**2.70**		**2.82**
Site Context																								
Size of patch	10	>200 ha		10			10			10			10			10			10			10		10.0
Connectedness	5	24%		4			4			4			4			4			4			4		4.0
Context	5	17.54%		4			4			4			4			4			4			4		4.0
Ecological Corridors	6			0			0			0			0			0			0			0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4			4		4.0
Threats to the species	15			7			7			7			7			7			7			7		7.0
Species mobility capacity	10			10			10			10			10			10			10			10		10.0
Site Context Score				39			39			39			39			39			39			39		39.0
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.09**			**2.09**			**2.09**			**2.09**			**2.09**			**2.09**			**2.09**		**2.09**

AU2 - Young Regrowth – preclear RE12.9-10.2

Site Reference	Benchmark	Site 5 Raw Data	Site 5 Benchmark	Site 5 Score	Site 7 Raw Data	Site 7 Benchmark	Site 7 Score	Site 9 Raw Data	Site 9 Benchmark	Site 9 Score	Site 14 Raw Data	Site 14 Benchmark	Site 14 Score	Site 15 Raw Data	Site 15 Benchmark	Site 15 Score	Site 18 Raw Data	Site 18 Benchmark	Site 18 Score	Average %	Average Score
Site Condition																					
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5	100	100%	5	4	100%	5	3	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5	6	100%	5.0	6	100%	5.0	6	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	7	15	214%	5	9	129%	5	13	186%	5	9	129%	5	10	143%	5	8	114%	5	214%	5.0
Native plant species richness - forbes	13	21	162%	5	16	123%	5	27	208%	5	14	108%	5	21	162%	5	21	162%	5	162%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	19.5	118%	5	16.5	100%	5	23.8	144%	5	17	103%	5	19.5	118%	5	18.7	113%	5	118%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	38.0	90%	5	21.0	50%	2	21.2	50%	5	19.2	46%	2	27.5	65%	5	39.0	93%	5	90%	4.0
Shrub canopy cover	6	6.8	113%	5	6.1	102%	5	5	83%	5	5.8	97%	5	5	83%	5	6	100%	5	113%	5
Native grass cover	21	32	152%	5	21	100%	5	40	190%	5	75	357%	5	27	129%	3	27	129%	5	152%	4.7
Organic litter	48	44	92%	5	51	106%	5	50	104%	5	42	88%	5	52	108%	5	45	94%	5	92%	5.0
Large trees (euc plus non-euc)	38	9	24%	5	4	11%	5	5	13%	5	18	47%	5	22	58%	10	39	103%	15	24%	7.5
Coarse woody debris	506	445	88%	5	360	71%	5	729	144%	5	526	104%	5	490	97%	5	376	74%	5	88%	5.0
Non-native plant cover	0	15		5	20		5	10		5	4		10	3		10	5		5		6.7
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Site Condition Score				85			82			85			87			93			95		87.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.55**			**2.46**			**2.55**			**2.61**			**2.79**			**2.85**		**2.64**
Site Context																					
Size of patch	10	>200 ha		10			10			10			10			10			10		10.0
Connectedness	5	24%		4			4			4			4			4			4		4
Context	5	17.54%		4			4			4			4			4			4		4
Ecological Corridors	6			0			0			0			0			0			0		0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4
Threats to the species	15			7			7			7			7			7			7		7
Species mobility capacity	10			10			10			10			10			10			10		10
Site Context Score				39			39			39			39			39			39		39.0
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.09**			**2.09**			**2.09**			**2.09**			**2.09**			**2.09**		**2.09**

AU 3 - Pastural Grassland – preclear RE12.9-10.2

Site Reference	Benchmark	Site 6 Raw Data	Site 6 Benchmark	Site 6 Score	Site 8 Raw Data	Site 8 Benchmark	Site 8 Score	Site 10 Raw Data	Site 10 Benchmark	Site 10 Score	Site 16 Raw Data	Site 16 Benchmark	Site 16 Score	Site 17 Raw Data	Site 17 Benchmark	Site 17 Score	Site 19 Raw Data	Site 19 Benchmark	Site 19 Score	Average %	Average Score	Total average % benchmark	Total average score
Site Condition																							
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	100%	5.0	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	200%	5.0	133%	5.0
Native plant species richness - grasses	7	7	100%	5	7	100%	5	8	114%	5	8	114%	5	7	100%	5	8	114%	5	107%	5.0	150%	5.0
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5	16	123%	5	13	100%	5	13	100%	5	123%	5.0	136%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14.0	85%	5	16.5	100%	5	13.5	82%	5	16.5	100%	5	15.5	94%	5	14.5	88%	5	91%	5.0	107%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	22	52%	5	24	57%	5	22	52%	5	36	86%	5	32	76%	5	23	55%	5	63%	5.0	90%	4.7
Shrub canopy cover	6	6.4	107%	5	5.2	87%	5	5.9	98%	5	6	100%	5	6	100%	5	6.3	105%	5	99%	5.0	132%	5.0
Native grass cover	21	29	138%	5	35	167%	5	25	119%	5	22	105%	5	35	167%	5	27	129%	5	137%	5.0	144%	4.9
Organic litter	48	37	77%	5	44	92%	5	33	69%	5	50	104%	5	37	77%	5	42	88%	5	84%	5.0	95%	5.0
Large trees (euc plus non-euc)	38	5	13%	5	4	11%	5	4	11%	5	2	5%	5	3	8%	5	4	11%	5	10%	5.0	44%	8.2
Coarse woody debris	506	328	65%	5	333	66%	5	312	62%	5	367	73%	5	378	75%	5	412	81%	5	70%	5.0	81%	5.0
Non-native plant cover	0	30		3	25		5	10		5	20		5	25		5	20		5	0%	4.7	0%	6.1
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0	0%	10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0	0%	10.0
Site Condition Score				83			85			85			85			85			85		84.7		88.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*		*100*
Site Condition Score - out of 3				**2.49**			**2.55**			**2.55**			**2.55**			**2.55**			**2.55**		**2.54**		**2.67**
Site Context																							
Size of patch	10	>200 ha		10			10			10			10			10			10		10		10.0
Connectedness	5	24%		4			4			4			4			4			4		4		4.0
Context	5	17.54%		4			4			4			4			4			4		4		4.0
Ecological Corridors	6			0			0			0			0			0			0		0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4		4.0
Threats to the species	15			7			7			7			7			7			7		7		7.0
Species mobility capacity	10			10			10			10			10			10			10		10		10.0
Site Context Score				39			39			39			39			39			39		29		39
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*		*56*
Site Context Score - out of 3				**2.09**			**2.09**			**2.09**			**2.09**			**2.09**			**2.09**		**1.55**		**2.09**

Species Stocking Rate (SSR)						**AU1**	**AU2**	**AU3**	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	10	10	10	
		No	Yes - adjacent		Yes - on site				
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	15	15	15	
		Not habitat	Dispersal	Foraging	Breeding				
Approximate density (per ha)	Score	0	10	20	30	20	20	20	
		0%	low	medium	high				
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10	15	5	5	5	
		0	5 - 15	20 - 35	40 - 45				
Total SRR score (out of 70)						50	50	50	
SRR Score (out of 4)						**2.9**	**2.9**	**2.9**	

***SSR Supplementary Table**				**AU1**	**AU2**	**AU3**	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 3)	2.82	2.64	2.54		2.67
Site Context Score (out of 3)	2.09	2.09	1.55		1.91
Species Stocking Rate Score (out of 4)	2.86	2.86	2.86		2.86
Habitat Quality score (out of 10)	*7.77*	*7.58*	*6.95*		*7.43*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.31	184.31	184.31		184.31
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***1.19***	***2.93***	***3.20***		***7.32***

28ºS ENVIRONMENTAL

Appendix 32

Alternative Habitat Quality Assessment for Grey-headed Flying-fox at the Offset Site

28ºS ENVIRONMENTAL

Appendix 32.1

Alternative HQA Data Sheet - Baseline

OFFSET - Grey headed flying fox_baseline

Assessment Unit - Regional Ecosystem	AU 1 - Remnant and High Value Regrowth RE12.9-10.2																						
		AU1a - Remnant						AU1b - High Value Regrowth															
Site Reference	Benchmark	Site 3			Site 4			Site 1			Site 2			Site 11			Site 12			Site 13			Average
	12.9-10.2	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	% / Score
Site Condition																							
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	2	100%	5	100% / 5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	5	83%	2.5	3	50%	2.5	5	83%	2.5	5	83%	2.5	5	83%	2.5	100% / 3.2
Native plant species richness - shrubs	7	6	86%	2.5	5	71%	2.5	6	86%	2.5	3	43%	2.5	8	114%	5	5	71%	2.5	9	129%	5	86% / 3.2
Native plant species richness - grasses	7	6	86%	2.5	7	100%	5	10	143%	5	10	143%	5	11	157%	5	11	157%	5	8	114%	5	86% / 4.6
Native plant species richness - forbes	13	14	108%	5	33	254%	5	18	138%	5	19	146%	5	18	138%	5	23	177%	5	21	162%	5	108% / 5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	16.3	98%	5	18.4	112%	5	15.5	94%	5	18.5	112%	5	16.5	100%	5	16	97%	5	17.5	106%	5	98% / 5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	45.6	109%	5	41.1	98%	5	32.0	76%	5	28.6	68%	5	38.3	91%	5	47.4	113%	5	39.3	94%	5	109% / 5.0
Shrub canopy cover	6	11.9	198%	5	13.3	222%	3	7	117%	5	6.9	115%	5	2.6	43%	3	10.5	175%	5	2.5	42%	3	198% / 4.1
Native grass cover	21	22	105%	5	11.8	56%	1	19	90%	3	23	110%	5	22	105%	5	9.4	45%	1	21	100%	5	105% / 3.6
Organic litter	48	40.4	84%	5	50	104%	5	56	117%	5	40.2	84%	5	18.4	38%	3	60.4	126%	5	37.2	78%	5	84% / 4.7
Large trees (euc plus non-euc)	38	30	79%	10	32	84%	10	28	74%	10	38	100%	10	22	58%	10	14	37%	5	14	37%	5	79% / 8.6
Coarse woody debris	506	160	32%	2	280	55%	5	460	91%	5	430	85%	5	42	8%	0	60	12%	2	60	12%	2	32% / 3.0
Non-native plant cover	0	60		0	35		3	25		5	70		0	35		3	20		5	30		3	2.7
Quality and availability of food and foraging habitat (/80) Alternative Scoring Method Supplimentary Data	80	55		55	53		53	45		45	40		40	35		35	43		43	43		43	44.9
Quality and availability of shelter (20) Alternative Scoring Method Supplimentary Data	20	0		0	0		0	0		0	0		0	0		0	0		0	0		0	0.0
Site Condition Score				112			112.5			108			100			91.5			96			98.5	102.6
MAX Site Condition Score				*180*			*180*			*180*			*180*			*180*			*180*			*180*	*180*
Site Condition Score - out of 4				**2.49**			**2.50**			**2.40**			**2.22**			**2.03**			**2.13**			**2.19**	**2.28**
Site Context																							
Size of patch	10	>200 ha		2			2			10			10			0			0			10	4.9
Connectedness	5	24%		2			2			2			2			2			2			2	2.0
Context	5	17.54%		2			2			2			2			2			2			2	2.0
Ecological Corridors	6			0			0			0			0			0			0			0	0.0
Role of site location to species overall population in the state Alternative Scoring Method Supplimentary Data	30	4		4	4		4	4		4	4		4	4		4	4		4	4		4	4.0
Threats to the species Alternative Scoring Method Supplimentary Data	30	10		10	10		10	10		10	10		10	10		10	10		10	10		10	10.0
Species mobility capacity	10			10			10			10			10			10			10			10	10.0
Site Context Score				30			30			38			38			28			28			38	32.9
MAX Site Context Score	*96*			*96*			*96*			*96*			*96*			*96*			*96*			*96*	*96*
Site Context Score - out of 3				**0.94**			**0.94**			**1.19**			**1.19**			**0.88**			**0.88**			**1.19**	**1.03**

Site Reference	AU2 - Young Regrowth – preclear RE12.9-10.2																			
	Benchmark	Site 5			Site 7			Site 9			Site 14			Site 15			Site 18			Average
		Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	% / Score
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5	100	100%	5	4	100%	5	3	100%	5	100% / 5.0
Native plant species richness - trees	6	6	100%	5.0	3	50%	2.5	3	50%	2.5	4	67%	2.5	5	83%	2.5	2	33%	2.5	100% / 2.9
Native plant species richness - shrubs	7	3	43%	2.5	2	29%	2.5	3	43%	2.5	5	71%	2.5	7	100%	5	4	57%	2.5	43% / 2.9
Native plant species richness - grasses	7	14	200%	5	6	86%	2.5	12	171%	5	8	114%	5	9	129%	5	6	86%	2.5	200% / 4.2
Native plant species richness - forbes	13	19	146%	5	15	115%	5	27	208%	5	13	100%	5	21	162%	5	21	162%	5	146% / 5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	15.5	94%	5	8	48%	3	21.8	132%	5	8	48%	3	14.3	87%	5	14.5	88%	5	94% / 4.3
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	28.4	68%	5	4.9	12%	2	9.8	23%	2	9.0	21%	2	18.8	45%	2	28.8	69%	5	68% / 3.0
Shrub canopy cover	6	3	50%	3	0	0%	0	0.7	12%	3	1.5	25%	3	1	17%	3	2.5	42%	3	50% / 2.5
Native grass cover	21	23.2	110%	5	8	38%	1	30.6	146%	5	69.6	331%	5	18	86%	3	20	95%	5	110% / 4.0
Organic litter	48	22.4	47%	3	22	46%	3	36.2	75%	5	14	29%	3	38	79%	5	21	44%	3	47% / 3.7
Large trees (euc plus non-euc)	38	4	11%	5	0	0%	0	0	0%	0	10	26%	5	16	42%	5	32	84%	10	11% / 4.2
Coarse woody debris	506	280	55%	5	4	1%	0	760	150%	5	450	89%	5	265	52%	5	20	4%	0	55% / 3.3
Non-native plant cover	0	40		3	60		0	30		3	5		5	10		5	25		5	3.5
Quality and availability of food and foraging habitat (/80) Alternative Scoring Method Supplimentary Data	80	38		38	33		33	27		27	38		38	38		38	33		33	34.5
Quality and availability of shelter (20) Alternative Scoring Method Supplimentary Data	20	0		0	0		0	0		0	0		0	0		0	0		0	0.0
Site Condition Score				94.5			59.5			75			89			93.5			86.5	83.0
MAX Site Condition Score	*180*			*180*			*180*			*180*			*180*			*180*			*180*	*180*
Site Condition Score - out of 4				**2.10**			**1.32**			**1.67**			**1.98**			**2.08**			**1.92**	**1.84**
Size of patch	10	>200 ha		10			2			10			0			0			0	3.7
Connectedness	5	24%		2			2			2			2			2			2	2
Context	5	17.54%		2			2			2			2			2			2	2
Ecological Corridors	6			0			0			0			0			0			0	0
Role of site location to species overall population in the state Alternative Scoring Method Supplimentary Data	30	4		4	4		4	4		4	4		4	4		4	4		4	4
Threats to the species Alternative Scoring Method Supplimentary Data	30	10		10	10		10	10		10	10		10	10		10	10		10	10
Species mobility capacity	10			10			10			10			10			10			10	10
Site Context Score				38			30			38			28			28			28	31.7
MAX Site Context Score	*96*			*96*			*96*			*96*			*96*			*96*			*96*	*96*
Site Context Score - out of 3				**1.19**			**0.94**			**1.19**			**0.88**			**0.88**			**0.88**	**0.99**

Site Reference	AU 3 - Pastural Grassland – preclear RE12.9-10.2																					
	Benchmark	Site 6			Site 8			Site 10			Site 16			Site 17			Site 19			Average	**Total average % benchmark**	**Total average score**
		Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	Raw Data	Benchmar	Score	% / Score		
Recruitment of woody perennial species in EDL	100	0	0%	0	0	0%	0	0	0%	0	2	100%	5	0	0%	0	1	100%	5	33% / 1.7	78%	3.9
Native plant species richness - trees	6	4	67%	2.5	0	0%	0.0	2	33%	2.5	2	33%	2.5	0	0%	0	1	17%	0	25% / 1.3	75%	2.5
Native plant species richness - shrubs	7	0	0%	0	0	0%	0	0	0%	0	3	43%	2.5	1	14%	0	0	0%	2.5	124% / 0.8	84%	2.3
Native plant species richness - grasses	7	1	14%	0.0	6	86%	3	8	114%	5	7	100%	5	4	57%	2.5	3	43%	2.5	69% / 2.9	118%	3.9
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5	16	123%	5	9	69%	2.5	7	54%	2.5	110% / 4.2	121%	4.7
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	0.0	0%	0	9.0	55%	3	0.0	0%	0	8.5	52%	3	4.0	24%	0	0	0%	0	22% / 1.0	71%	3.4
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	0	0%	0	1.7	4%	0	0	0%	0	6.5	15%	2	0.5	1%	0	0	0%	0	3% / 0.3	60%	2.8
Shrub canopy cover	6	3.6	60%	5	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	10% / 0.8	86%	2.5
Native grass cover	21	18.8	90%	3	27	129%	5	16.4	78%	3	0	0%	0	28	133%	5	18	86%	3	86% / 3.2	100%	3.6
Organic litter	48	12.2	25%	3	12.8	27%	3	6	13%	3	16	33%	3	5	10%	3	1	2%	0	18% / 2.5	50%	3.6
Large trees (euc plus non-euc)	38	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0% / 0.0	30%	4.2
Coarse woody debris	506	0	0%	0	2	0%	0	0	0%	0	0	0%	0	0	0%	0	20	4%	0	1% / 0.0	29%	2.1
Non-native plant cover	0	65		0	60		0	50		3	50		3	55		3	50		3	0% / 2.0	0%	2.7
Quality and availability of food and foraging habitat (/80) Alternative Scoring Method Supplimentary Data	80	5		5	5		5	5		5	5		5	5		5	5		5	5.0	0%	28.1
Quality and availability of shelter (20) Alternative Scoring Method Supplimentary Data	20	0		0	0		0	0		0	0		0	0		0	0		0	0.0	0%	0.0
Site Condition Score				24			24			27			36			21			24	25.7		70.4
MAX Site Condition Score	*180*			*180*			*180*			*180*			*180*			*180*			*180*	*180*		*180*
Site Condition Score - out of 4				**0.52**			**0.52**			**0.59**			**0.80**			**0.47**			**0.52**	**0.57**		**1.57**
Size of patch	10	>200 ha		10			10			10			10			10			10	10		6.2
Connectedness	5	24%		2			2			2			2			2			2	2		2.0
Context	5	17.54%		2			2			2			2			2			2	2		2.0
Ecological Corridors	6			0			0			0			0			0			0	0		0.0
Role of site location to species overall population in the state Alternative Scoring Method Supplimentary Data	30	4		4	4		4	4		4	4		4	4		4	4		4	4		4.0
Threats to the species Alternative Scoring Method Supplimentary Data	30	10		10	10		10	10		10	10		10	10		10	10		10	10		10.0
Species mobility capacity	10			10			10			10			10			10			10	10		10.0
Site Context Score				38			38			38			38			38			38	28		34
MAX Site Context Score				*96*			*96*			*96*			*96*			*96*			*96*	*96*		*96*
Site Context Score - out of 3				**1.19**			**1.19**			**1.19**			**1.19**			**1.19**			**1.19**	**0.88**		**1.07**

Species Stocking Rate (SSR)						AU1	AU2	AU3	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	10	10	10	
		No	Yes - adjacent		Yes - on site				
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	15	15	15	
		Not habitat	Dispersal	Foraging	Breeding				
Approximate density (per ha)*Alternative Scoring Method Supplimentary Data*	Score	0	10	20	30	10	10	10	
		0%	low	medium	high				
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10	15	5	5	5	
		0	5 - 15	20 - 35	40 - 45				
Total SRR score (out of 70)						40	40	40	
SRR Score (out of 3)						**1.71**	**1.71**	**1.71**	

***SSR Supplementary Table**				AU1	AU2	AU3	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 4)	2.28	1.84	0.57		1.57
Site Context Score (out of 3)	1.03	0.99	0.88		0.96
Species Stocking Rate Score (out of 3)	1.71	1.71	1.71		1.71
Habitat Quality score (out of 10)	*5.02*	*4.55*	*3.16*		*4.24*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.32	184.32	184.32		184.32
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***0.77***	***1.76***	***1.46***		***3.98***

Alternative Scoring Method Supplimentary Data

SITE CONDITION ATTRIBUTE SCORING DATA

Quality and availability of food and foraging habitat of the site scoring (Foraging within Site + Diversity of Foraging + Quality of flowering + Biological Timing + Quality of Foraging

Table A16-1 Vegetation condition score (Fill Cell Attribute Yellow and Assign Score out of /20)

Vegetation categories	Score Category	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
Category X	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Field Validated Regrowth	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Field Validated Remnant	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Score	/20	**20**	**20**	**10**	**10**	**5**	**10**	**10**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**

Table A16-2 Canopy species richness score

Diversity of Grey-headed flying-fox canopy species categories	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
No Grey-headed flying-fox canopy species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 – 3 Grey-headed flying-fox canopy species	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
4 – 6 Grey-headed flying fox canopy species	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
>6 Grey-headed flying-fox canopy species	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Score	/20	**10**	**10**	**10**	**5**	**10**	**10**	**10**	**10**	**5**	**5**	**10**	**10**	**5**	**0**	**0**	**0**	**0**	**0**	**0**

Table A16-3 Grey-headed flying-fox flower score (average) score

Quality of Grey-headed flying-fox flowering score categories	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
0.01 - 0.25	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
0.26 – 0.50	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
0.51 - 0.75	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
0.76 – 1.00	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Score	/10	**5**	**8**	**10**	**10**	**5**	**8**	**8**	**8**	**8**	**2**	**8**	**8**	**8**	**0**	**0**	**0**	**0**	**0**	**0**

Table A16-4 Grey-headed flying-fox timing of biological scoring

Timing of flowering of Grey-headed flying-fox foraging resource categories	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
Food shortages	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Pregnancy and birthing	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lactation	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Mating and conception	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Migration paths	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Fruit industries	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total Score	/10	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**0**	**0**	**0**	**0**	**0**	**0**

Table A16-5 Grey-headed flying-fox foraging habitat trees

Quality of foraging habitat trees (trees>0.65 wt p*r) categories	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
0 Significant Grey-headed flying-fox foraging trees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-3 Significant Grey-headed flying-fox foraging trees	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
4-6 Significant Grey-headed flying-fox foraging trees	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
>.6 Significant Grey-headed flying-fox foraging trees	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Score	/20	**10**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**0**	**0**	**0**	**0**	**0**	**0**
	Total Score /80	55	53	45	40	35	43	43	38	33	27	38	38	33	5	5	5	5	5	5

Quality and availability of shelter of the Site scoring (porimity to cmaps)

Table A16-6 Grey-headed flying-fox quality of shelter

Site's quality of shelter category	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
No Grey-headed flying-fox nationally important or other flying-fox camps on site or within 1 km	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grey-headed flying-fox nationally important or other flying-fox camps within 1 km	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Grey-headed flying-fox nationally important or other flying-fox camp on site	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Total Score	/20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Score /20	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SITE CONTEXT ATTRIBUTE SCORING DATA

ROLE OF SITE LOCATION TO SPECIES OVERALL POPULATION IN THE STATE (Camps within 20km + Foraging within 20km + Foraging within Site)

Table A16-7 Grey-headed flying-fox nationally important camps and flying-fox camps within 25km of the Site

Abundance of flying-fox camps with a Level 3 or greater Grey-headed flying-fox camp in the last 2 years	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3					
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<1 active > Level 3 Grey-headed flying-fox camps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1-5 active > Level 3 Grey-headed flying-fox camps	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6> active > Level 3 Grey-headed flying-fox camps	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
1 or more nationally important Grey-headed flying-fox camps (noted in National Recovery Plan as Critical to the survival of the species)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Score	/10	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Table A16-8 Grey-headed flying-fox foraging habitat in proximity to the site

Abundance of Category B and C mapping within 25 km of the site	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<25% Category B and C mapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-50% Category B and C mapping	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
51-75% Category B and C mapping	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
>76% Category B and C mapping	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Score	/10	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**

Table A16-9 Grey-headed flying-fox foraging habitat within the site

Abundance of Category B and C mapping within the site	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<25% Category B and C mapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-50% Category B and C mapping	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
51-75% Category B and C mapping	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
>76% Category B and C mapping	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Score	/10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Score /30	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Threats to species scoring (Fragmentation + Camp Disturbance)

Table A16-10 Grey-headed flying-fox habitat fragmentation in proximity to Site

Abundance of Category B and C mapping within 25 km of the site	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<25% Category B and C mapping – Highly fragmentated, largely urban or large pastural areas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26-50% Category B and C mapping – moderately fragmented, peri urban and coastal fringes	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
51-75% Category B and C mapping - peri urban rural landscape	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
>75% Category B and C mapping – highly intact areas (proximate national parks/state forests).	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Score	/15	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**

Table A16-11 Grey-headed flying-fox nationally important camps and flying-fox camps

Abundance of flying-fox camps with a Level 3 or greater Grey-headed flying-fox camp in the last 2 years	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<1 active > Level 3 Grey-headed flying-fox camps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 active > Level 3 Grey-headed flying-fox camps	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6-10 active > Level 3 Grey-headed flying-fox camps	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1 or more nationally important Grey-headed flying-fox camps (noted in National Recovery Plan as Critical to the survival of the species)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Score	/15	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
	Total Score /30	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**

SPECIES STOCKING RATE ATTRIBUTE SCORING DATA

Approximate Density (per ha) (Importance of Camps to Site's location + Foraging Resources (%) within Site

Table A16-12 Grey-headed flying-fox nationally important camps and flying-fox camps within 25km of the Site

Abundance of flying-fox camps with a Level 3 or greater Grey-headed flying-fox camp in the last 2 years	Score	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
<1 active > Level 3 Grey-headed flying-fox camps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1-5 active > Level 3 Grey-headed flying-fox camps	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6-10 active > Level 3 Grey-headed flying-fox camps	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1 or more nationally important Grey-headed flying-fox camps (noted in National Recovery Plan as Critical to the survival of the species)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Score	/15	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Table A16-13 Grey-headed flying-fox foraging habitat within the site

Vegetation categories	Score Category	Assessment Unit 1							Assessment Unit 2						Assessment Unit 3						
		MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
Category X	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Field Validated Regrowth	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Field Validated Remnant	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Total Score	/15	**15**	**15**	**10**	**10**	**10**	**10**	**10**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
	Total Score /30	**15**	**15**	**10**	**10**	**10**	**10**	**10**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**

SITE CONDITION ATTRIBUTE SCORING DATA	Score	MHQA 3	MHQA 4	MHQA 1	MHQA 2	MHQA 11	MHQA 12	MHQA 13	MHQA 5	MHQA 7	MHQA 9	MHQA 14	MHQA 15	MHQA 18	MHQA 6	MHQA 8	MHQA 10	MHQA 16	MHQA 17	MHQA 19
Quality and availability of food and foraging habitat of the site scoring	/80	**55**	**53**	**45**	**40**	**35**	**43**	**43**	**38**	**33**	**27**	**38**	**38**	**33**	**5**	**5**	**5**	**5**	**5**	**5**
Quality and availability of shelter of the Site scoring	/20	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SITE CONTEXT ATTRIBUTE SCORING DATA																						
Role of site location to species overall population in the state	/30	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**		
Threats to species scoring	/30	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**		
SPECIES STOCKING RATE ATTRIBUTE SCORING DATA																						
Approximate Density (Per Ha)	/30	**15**	**15**	**10**	**10**	**10**	**10**	**10**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	7.36842105	
																					Round to 10	

28ºS ENVIRONMENTAL

Appendix 32.2

Alternative HQA

20 years with offset

OFFSET - Greater glider yr20 with offset

Assessment Unit - Regional Ecosystem	AU 1 - Remnant and High Value Regrowth RE12.9-10.2																							
		AU1a - Remnant						AU1b - High Value Regrowth																
Site Reference	**Benchmark**	Site 3			Site 4			Site 1			Site 2			Site 11			Site 12			Site 13			Average	Average
	12.9-10.2	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score
Site Condition																								
Recruitment of woody perennial species in EDL	**100**	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	2	100%	5	100%	5.0
Native plant species richness - trees	**6**	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	100%	5.0
Native plant species richness - shrubs	**7**	7	100%	5	6	86%	5	7	100%	5	7	100%	5	8	114%	5	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	**7**	9	129%	5	10	143%	5	12	171%	5	10	143%	5	13	186%	5	13	186%	5	9	129%	5	129%	5.0
Native plant species richness - forbes	**13**	16	123%	5	34	262%	5	20	154%	5	19	146%	5	20	154%	5	24	185%	5	22	169%	5	123%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	**16.5**	18.5	112%	5	20.8	126%	5	18.9	115%	5	22	133%	5	21	127%	5	20.4	124%	5	22	133%	5	112%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	**42**	49.0	117%	5	45.0	107%	5	40.0	95%	5	38.0	90%	5	43	102%	5	54	129%	5	45	107%	5	117%	5.0
Shrub canopy cover	**6**	11	183%	5	10	167%	5	11.3	188%	5	12	200%	5	6	100%	5	13	217%	5	5.2	87%	5	183%	5.0
Native grass cover	**21**	30	143%	5	23	110%	5	31	148%	5	35	167%	5	33	157%	5	24	114%	5	32	152%	5	143%	5.0
Organic litter	**48**	52	108%	5	65	135%	5	65	135%	5	52	108%	5	38	79%	5	75	156%	5	50	104%	5	108%	5.0
Large trees (euc plus non-euc)	**38**	37	97%	10	40	105%	15	39	103%	15	43	113%	15	27	71%	10	20	53%	10	20	53%	10	97%	12.1
Coarse woody debris	**506**	426	84%	5	480	95%	5	510	101%	5	514	102%	5	335	66%	5	402	79%	5	354	70%	5	84%	5.0
Non-native plant cover	**0**	25		5	4		10	4		10	35		3	15		5	4		10	10		5		6.9
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Site Condition Score				90			100			100			93			90			95			90		94.0
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.70**			**3.00**			**3.00**			**2.79**			**2.70**			**2.85**			**2.70**		**2.82**
Site Context																								
Size of patch	10	>200 ha		10			10			10			10			10			10			10		10.0
Connectedness	5	24%		4			4			4			4			4			4			4		4.0
Context	5	17.54%		4			4			4			4			4			4			4		4.0
Ecological Corridors	6			0			0			0			0			0			0			0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4			4		4.0
Threats to the species	15			15			15			15			15			15			15			15		15.0
Species mobility capacity	10			10			10			10			10			10			10			10		10.0
Site Context Score				47			47			47			47			47			47			47		47.0
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.52**			**2.52**			**2.52**			**2.52**			**2.52**			**2.52**			**2.52**		**2.52**

Assessment Unit - Regional Ecosystem	AU2 - Young Regrowth – preclear RE12.9-10.2																			
Site Reference	**Benchmark**	Site 5			Site 7			Site 9			Site 14			Site 15			Site 18			Average	Average
		Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score
Site Condition																					
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5	100	100%	5	4	100%	5	3	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5	6	100%	5.0	6	100%	5.0	6	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	7	15	214%	5	9	129%	5	13	186%	5	9	129%	5	10	143%	5	8	114%	5	214%	5.0
Native plant species richness - forbes	13	21	162%	5	16	123%	5	27	208%	5	14	108%	5	21	162%	5	21	162%	5	162%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	19.5	118%	5	16.5	100%	5	23.8	144%	5	17	103%	5	19.5	118%	5	18.7	113%	5	118%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	38.0	90%	5	21.0	50%	2	21.2	50%	5	19.2	46%	2	27.5	65%	5	39.0	93%	5	90%	4.0
Shrub canopy cover	6	6.8	113%	5	6.1	102%	5	5	83%	5	5.8	97%	5	5	83%	5	6	100%	5	113%	5
Native grass cover	21	32	152%	5	21	100%	5	40	190%	5	75	357%	5	27	129%	3	27	129%	5	152%	4.7
Organic litter	48	44	92%	5	51	106%	5	50	104%	5	42	88%	5	52	108%	5	45	94%	5	92%	5.0
Large trees (euc plus non-euc)	38	9	24%	5	4	11%	5	5	13%	5	18	47%	5	22	58%	10	39	103%	15	24%	7.5
Coarse woody debris	506	445	88%	5	360	71%	5	729	144%	5	526	104%	5	490	97%	5	376	74%	5	88%	5.0
Non-native plant cover	0	15		5	20		5	10		5	4		10	3		10	5		5		6.7
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Quality and availability of shelter	N/A	10		10	10		10	10		10	10		10	10		10	10		10		10.0
Site Condition Score				85			82			85			87			93			95		87.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.55**			**2.46**			**2.55**			**2.61**			**2.79**			**2.85**		**2.64**
Site Context																					
Size of patch	10	>200 ha		10			10			10			10			10			10		10.0
Connectedness	5	24%		4			4			4			4			4			4		4
Context	5	17.54%		4			4			4			4			4			4		4
Ecological Corridors	6			0			0			0			0			0			0		0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4
Threats to the species	15			15			15			15			15			15			15		15
Species mobility capacity	10			10			10			10			10			10			10		10
Site Context Score				47			47			47			47			47			47		47.0
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**2.52**			**2.52**			**2.52**			**2.52**			**2.52**			**2.52**		**2.52**

Assessment Unit - Regional Ecosystem	AU 3 - Pastural Grassland – preclear RE12.9-10.2																				**Total average % benchmark**	**Total average score**
Site Reference	**Benchmark**	Site 6			Site 8			Site 10			Site 16			Site 17			Site 19			Average	Average		
		Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score		
Site Condition																							
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	100%	5.0	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	6	100%	5	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	7	100%	5	200%	5.0	133%	5.0
Native plant species richness - grasses	7	7	100%	5	7	100%	5	8	114%	5	8	114%	5	7	100%	5	8	114%	5	107%	5.0	150%	5.0
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5	16	123%	5	13	100%	5	13	100%	5	123%	5.0	136%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14.0	85%	5	16.5	100%	5	13.5	82%	5	16.5	100%	5	15.5	94%	5	14.5	88%	5	91%	5.0	107%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	22	52%	5	24	57%	5	22	52%	5	36	86%	5	32	76%	5	23	55%	5	63%	5.0	90%	4.7
Shrub canopy cover	6	6.4	107%	5	5.2	87%	5	5.9	98%	5	6	100%	5	6	100%	5	6.3	105%	5	99%	5.0	132%	5.0
Native grass cover	21	29	138%	5	35	167%	5	25	119%	5	22	105%	5	35	167%	5	27	129%	5	137%	5.0	144%	4.9
Organic litter	48	37	77%	5	44	92%	5	33	69%	5	50	104%	5	37	77%	5	42	88%	5	84%	5.0	95%	5.0
Large trees (euc plus non-euc)	38	5	13%	5	4	11%	5	4	11%	5	2	5%	5	3	8%	5	4	11%	5	10%	5.0	44%	8.2
Coarse woody debris	506	328	65%	5	333	66%	5	312	62%	5	367	73%	5	378	75%	5	412	81%	5	70%	5.0	81%	5.0
Non-native plant cover	0	30		3	25		5	10		5	20		5	25		5	20		5	0%	4.7	0%	6.1
Quality and availability of food and foraging habitat	N/A	5		5	5		5	5		5	5		5	5		5	5		5		5.0	0%	8.3
Quality and availability of shelter	N/A	5		5	5		5	5		5	5		5	5		5	10		10		5.8	0%	8.6
Site Condition Score				73			75			75			75			75			80		75.5		85.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*		*100*
Site Condition Score - out of 3				**2.19**			**2.25**			**2.25**			**2.25**			**2.25**			**2.40**		**2.27**		**2.57**
Site Context																							
Size of patch	10	>200 ha		10			10			10			10			10			10		10		10.0
Connectedness	5	24%		4			4			4			4			4			4		4		4.0
Context	5	17.54%		4			4			4			4			4			4		4		4.0
Ecological Corridors	6			0			0			0			0			0			0		0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4		4.0
Threats to the species	15			15			15			15			15			15			15		15		15.0
Species mobility capacity	10			10			10			10			10			10			10		10		10.0
Site Context Score				47			47			47			47			47			47		37		47
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*		*56*
Site Context Score - out of 3				**2.52**			**2.52**			**2.52**			**2.52**			**2.52**			**2.52**		**1.98**		**2.52**

Species Stocking Rate (SSR)							AU1	AU2	AU3	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10		10	10	10	
		No	Yes - adjacent		Yes - on site					
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15		15	15	15	
		Not habitat	Dispersal	Foraging	Breeding					
Approximate density (per ha)	Score	0	10	20	30		20	20	20	
		0%	low	medium	high					
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10		15	5	5	5	
		0	5 - 15	20 - 35		40 - 45				
Total SRR score (out of 70)							50	50	50	
SRR Score (out of 4)							**2.9**	**2.9**	**2.9**	

***SSR Supplementary Table**				AU1	AU2	AU3	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 3)	2.82	2.64	2.27		2.57
Site Context Score (out of 3)	2.52	2.52	1.98		2.34
Species Stocking Rate Score (out of 4)	2.86	2.86	2.86		2.86
Habitat Quality score (out of 10)	*8.20*	*8.01*	*7.10*		*7.77*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.31	184.31	184.31		184.31
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***1.25***	***3.09***	***3.27***		***7.62***

28ºS ENVIRONMENTAL

Appendix 33

Modified Habitat Quality Assessment for Greater Glider at the Offset Site

28ºS ENVIRONMENTAL

Appendix 33.1

MHQA Data Sheet

OFFSET - Greater glider baseline

Assessment Unit - Regional Ecosystem	AU 1 - Remnant and High Value Regrowth RE12.9-10.2																							
		AU1a - Remnant						AU1b - High Value Regrowth																
Site Reference	**Benchmark**	Site 3			Site 4			Site 1			Site 2			Site 11			Site 12			Site 13			Average	Average
	12.9-10.2	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score
Site Condition																								
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5	2	100%	5	1	100%	5	1	100%	5	2	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5	6	100%	5	5	83%	2.5	3	50%	2.5	5	83%	2.5	5	83%	2.5	5	83%	2.5	100%	3.2
Native plant species richness - shrubs	7	6	86%	2.5	5	71%	2.5	6	86%	2.5	3	43%	2.5	8	114%	5	5	71%	2.5	9	129%	5	86%	3.2
Native plant species richness - grasses	7	6	86%	2.5	7	100%	5	10	143%	5	10	143%	5	11	157%	5	11	157%	5	8	114%	5	86%	4.6
Native plant species richness - forbes	13	14	108%	5	33	254%	5	18	138%	5	19	146%	5	18	138%	5	23	177%	5	21	162%	5	108%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	16.3	98%	5	18.4	112%	5	15.5	94%	5	18.5	112%	5	16.5	100%	5	16	97%	5	17.5	106%	5	98%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	45.6	109%	5	41.1	98%	5	32.0	76%	5	28.6	68%	5	38.3	91%	5	47.4	113%	5	39.3	94%	5	109%	5.0
Shrub canopy cover	6	11.9	198%	5	13.3	222%	3	7	117%	5	6.9	115%	5	2.6	43%	3	10.5	175%	5	2.5	42%	3	198%	4.1
Native grass cover	21	22	105%	5	11.8	56%	1	19	90%	3	23	110%	5	22	105%	5	9.4	45%	1	21	100%	5	105%	3.6
Organic litter	48	40.4	84%	5	50	104%	5	56	117%	5	40.2	84%	5	18.4	38%	3	60.4	126%	5	37.2	78%	5	84%	4.7
Large trees (euc plus non-euc)	38	30	79%	10	32	84%	10	28	74%	10	38	100%	10	22	58%	10	14	37%	5	14	37%	5	79%	8.6
Coarse woody debris	506	160	32%	2	280	55%	5	460	91%	5	430	85%	5	42	8%	0	60	12%	2	60	12%	2	32%	3.0
Non-native plant cover	0	60		0	35		3	25		5	70		0	35		3	20		5	30		3		2.7
Quality and availability of food and foraging habitat	N/A	5		5	5		5	5		5	5		5	5		5	5		5	5		5		5.0
Quality and availability of shelter	N/A	5		5	5		5	5		5	5		5	5		5	5		5	5		5		5.0
Site Condition Score				67			69.5			73			70			66.5			63			65.5		67.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.01**			**2.09**			**2.19**			**2.10**			**2.00**			**1.89**			**1.97**		**2.03**
Site Context																								
Size of patch	10	>200 ha		2			2			10			10			0			0			10		4.9
Connectedness	5	24%		2			2			2			2			2			2			2		2.0
Context	5	17.54%		2			2			2			2			2			2			2		2.0
Ecological Corridors	6			0			0			0			0			0			0			0		0.0
Role of site location to species overall population in the state	5			5			5			5			5			5			5			5		5.0
Threats to the species	15			7			7			7			7			7			7			7		7.0
Species mobility capacity	10			4			4			4			4			4			4			4		4.0
Site Context Score				22			22			30			30			20			20			30		24.9
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.18**			**1.18**			**1.61**			**1.61**			**1.07**			**1.07**			**1.61**		**1.33**

Assessment Unit - Regional Ecosystem	AU2 - Young Regrowth – preclear RE12.9-10.2																				
Site Reference	**Benchmark**	Site 5			Site 7			Site 9			Site 14			Site 15			Site 18			Average	Average
		Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score
Site Condition																					
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5	100	100%	5	4	100%	5	3	100%	5	100%	5.0
Native plant species richness - trees	6	6	100%	5.0	3	50%	2.5	3	50%	2.5	4	67%	2.5	5	83%	2.5	2	33%	2.5	100%	2.9
Native plant species richness - shrubs	7	3	43%	2.5	2	29%	2.5	3	43%	2.5	5	71%	2.5	7	100%	5	4	57%	2.5	43%	2.9
Native plant species richness - grasses	7	14	200%	5	6	86%	2.5	12	171%	5	8	114%	5	9	129%	5	6	86%	2.5	200%	4.2
Native plant species richness - forbes	13	19	146%	5	15	115%	5	27	208%	5	13	100%	5	21	162%	5	21	162%	5	146%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	15.5	94%	5	8	48%	3	21.8	132%	5	8	48%	3	14.3	87%	5	14.5	88%	5	94%	4.3
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	28.4	68%	5	4.9	12%	2	9.8	23%	2	9.0	21%	2	18.8	45%	2	28.8	69%	5	68%	3.0
Shrub canopy cover	6	3	50%	3	0	0%	0	0.7	12%	3	1.5	25%	3	1	17%	3	2.5	42%	3	50%	2.5
Native grass cover	21	23.2	110%	5	8	38%	1	30.6	146%	5	69.6	331%	5	18	86%	3	20	95%	5	110%	4.0
Organic litter	48	22.4	47%	3	22	46%	3	36.2	75%	5	14	29%	3	38	79%	5	21	44%	3	47%	3.7
Large trees (euc plus non-euc)	38	4	11%	5	0	0%	0	0	0%	0	10	26%	5	16	42%	5	32	84%	10	11%	4.2
Coarse woody debris	506	280	55%	5	4	1%	0	760	150%	5	450	89%	5	265	52%	5	20	4%	0	55%	3.3
Non-native plant cover	0	40		3	60		0	30		3	5		5	10		5	25		5		3.5
Quality and availability of food and foraging habitat	N/A	5		5	5		1	1		1	1		1	5		5	5		5		3.0
Quality and availability of shelter	N/A	5		5	5		1	1		1	1		1	1		1	5		5		2.3
Site Condition Score				66.5			28.5			50			53			61.5			63.5		53.8
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*
Site Condition Score - out of 3				**2.00**			**0.86**			**1.50**			**1.59**			**1.85**			**1.91**		**1.62**
Site Context																					
Size of patch	10	>200 ha		10			2			10			0			0			0		3.7
Connectedness	5	24%		2			2			2			2			2			2		2
Context	5	17.54%		2			2			2			2			2			2		2
Ecological Corridors	6			0			0			0			0			0			0		0
Role of site location to species overall population in the state	5			5			5			5			5			5			5		5
Threats to the species	15			7			7			7			7			7			7		7
Species mobility capacity	10			1			1			1			1			1			1		1
Site Context Score				27			19			27			17			17			17		20.7
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*
Site Context Score - out of 3				**1.45**			**1.02**			**1.45**			**0.91**			**0.91**			**0.91**		**1.11**

Assessment Unit - Regional Ecosystem	AU 3 - Pastural Grassland – preclear RE12.9-10.2																					**Total average % benchmark**	**Total average score**
Site Reference	**Benchmark**	Site 6			Site 8			Site 10			Site 16			Site 17			Site 19			Average	Average		
		Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	Raw Data	Benchmark	Score	%	Score		
Site Condition																							
Recruitment of woody perennial species in EDL	100	0	0%	0	0	0%	0	0	0%	0	2	100%	5	0	0%	0	1	100%	5	33%	1.7	78%	3.9
Native plant species richness - trees	6	4	67%	2.5	0	0%	0	2	33%	2.5	2	33%	2.5	0	0%	0	1	17%	0	25%	1.3	75%	2.5
Native plant species richness - shrubs	7	0	0%	0	0	0%	0	0	0%	0	3	43%	2.5	1	14%	0	0	0%	0	124%	0.4	84%	2.2
Native plant species richness - grasses	7	1	14%	0	6	86%	3	8	114%	5	7	100%	5	4	57%	2.5	3	43%	2.5	69%	2.9	118%	3.9
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5	16	123%	5	9	69%	2.5	7	54%	2.5	110%	4.2	121%	4.7
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	0.0	0%	0	9.0	55%	3	0.0	0%	0	8.5	52%	3	4.0	24%	0	0	0%	0	22%	1.0	71%	3.4
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	0	0%	0	1.7	4%	0	0	0%	0	6.5	15%	2	0.5	1%	0	0	0%	0	3%	0.3	60%	2.8
Shrub canopy cover	6	3.6	60%	5	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	10%	0.8	86%	2.5
Native grass cover	21	18.8	90%	3	27	129%	5	16.4	78%	3	0	0%	0	28	133%	5	18	86%	3	86%	3.2	100%	3.6
Organic litter	48	12.2	25%	3	12.8	27%	3	6	13%	3	16	33%	3	5	10%	3	1	2%	0	18%	2.5	50%	3.6
Large trees (euc plus non-euc)	38	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0	0%	0	0%	0.0	30%	4.2
Coarse woody debris	506	0	0%	0	2	0%	0	0	0%	0	0	0%	0	0	0%	0	20	4%	0	1%	0.0	29%	2.1
Non-native plant cover	0	65		0	60		0	50		3	50		3	55		3	50		3	0%	2.0	0%	2.7
Quality and availability of food and foraging habitat	N/A	1		1	1		1	1		1	1		1	1		1	1		1		1.0	0%	3.0
Quality and availability of shelter	N/A	1		1	1		1	1		1	1		1	1		1	1		1		1.0	0%	2.8
Site Condition Score				21			21			24			33			18			18		22.3		48.0
MAX Site Condition Score				*100*			*100*			*100*			*100*			*100*			*100*		*100*		*100*
Site Condition Score - out of 3				**0.62**			**0.62**			**0.71**			**0.99**			**0.54**			**0.54**		**0.67**		**1.44**
Site Context																							
Size of patch	10	>200 ha		10			10			10			10			10			10		10		6.2
Connectedness	5	24%		2			2			2			2			2			2		2		2.0
Context	5	17.54%		2			2			2			2			2			2		2		2.0
Ecological Corridors	6			0			0			0			0			0			0		0		0.0
Role of site location to species overall population in the state	5			4			4			4			4			4			4		4		4.7
Threats to the species	15			4			4			4			4			4			4		4		6.0
Species mobility capacity	10			1			1			1			1			1			1		1		2.0
Site Context Score				23			23			23			23			23			23		13		23
MAX Site Context Score				*56*			*56*			*56*			*56*			*56*			*56*		*56*		*56*
Site Context Score - out of 3				**1.23**			**1.23**			**1.23**			**1.23**			**1.23**			**1.23**		**0.70**		**1.22**

Species Stocking Rate (SSR)						**AU1**	**AU2**	**AU3**	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5		10	10	10	10	
		No	Yes - adjacent		Yes - on site				
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	15	15	15	
		Not habitat	Dispersal	Foraging	Breeding				
Approximate density (per ha)	Score	0	10	20	30	10	10	10	
		0%	low	medium	high				
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10	15	5	5	5	
		0	5 - 15	20 - 35	40 - 45				
Total SRR score (out of 70)						40	40	40	
SRR Score (out of 4)						**2.3**	**2.3**	**2.3**	

***SSR Supplementary Table**				**AU1**	**AU2**	**AU3**	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 3)	2.03	1.62	0.67		1.44
Site Context Score (out of 3)	1.33	1.11	0.70		1.05
Species Stocking Rate Score (out of 4)	2.29	2.29	2.29		2.29
Habitat Quality score (out of 10)	*5.65*	*5.01*	*3.65*		*4.77*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.32	184.32	184.32		184.32
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***0.86***	***1.93***	***1.68***		***4.48***

28ºS ENVIRONMENTAL

Appendix 33.2

MHQA Data Sheet

20 years with offset

OFFSET - Greater glider yr20 with offset

AU 1 - Remnant and High Value Regrowth RE12.9-10.2 — AU1a - Remnant

Assessment Unit - Regional Ecosystem / Site Reference	Benchmark 12.9-10.2	Site 3 Raw Data	Site 3 Benchmark	Site 3 Score	Site 4 Raw Data	Site 4 Benchmark	Site 4 Score
Site Condition							
Recruitment of woody perennial species in EDL	**100**	2	100%	5	1	100%	5
Native plant species richness - trees	**6**	6	100%	5	6	100%	5
Native plant species richness - shrubs	**7**	7	100%	5	6	86%	5
Native plant species richness - grasses	**7**	9	129%	5	10	143%	5
Native plant species richness - forbes	**13**	16	123%	5	34	262%	5
Tree canopy height (average of emergent, canopy, sub-canopy)	**16.5**	18.5	112%	5	20.8	126%	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	**42**	49.0	117%	5	45.0	107%	5
Shrub canopy cover	**6**	11	183%	5	10	167%	5
Native grass cover	**21**	30	143%	5	23	110%	5
Organic litter	**48**	52	108%	5	65	135%	5
Large trees (euc plus non-euc)	**38**	37	97%	10	40	105%	15
Coarse woody debris	**506**	426	84%	5	480	95%	5
Non-native plant cover	**0**	25		5	4		10
Quality and availability of food and foraging habitat	N/A	10		10	10		10
Quality and availability of shelter	N/A	10		10	10		10
Site Condition Score				90			100
MAX Site Condition Score				*100*			*100*
Site Condition Score - out of 3				**2.70**			**3.00**
Site Context							
Size of patch	10	>200 ha		10			10
Connectedness	5	24%		4			4
Context	5	17.54%		4			4
Ecological Corridors	6			0			0
Role of site location to species overall population in the state	5			4			4
Threats to the species	15			15			15
Species mobility capacity	10			10			10
Site Context Score				47			47
MAX Site Context Score				*56*			*56*
Site Context Score - out of 3				**2.52**			**2.52**

AU1b - High Value Regrowth

Site Reference	Site 1 Raw Data	Site 1 Benchmark	Site 1 Score	Site 2 Raw Data	Site 2 Benchmark	Site 2 Score	Site 11 Raw Data	Site 11 Benchmark	Site 11 Score
Recruitment of woody perennial species in EDL	2	100%	5	2	100%	5	1	100%	5
Native plant species richness - trees	6	100%	5	6	100%	5	6	100%	5
Native plant species richness - shrubs	7	100%	5	7	100%	5	8	114%	5
Native plant species richness - grasses	12	171%	5	10	143%	5	13	186%	5
Native plant species richness - forbes	20	154%	5	19	146%	5	20	154%	5
Tree canopy height (average of emergent, canopy, sub-canopy)	18.9	115%	5	22	133%	5	21	127%	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	40.0	95%	5	38.0	90%	5	43	102%	5
Shrub canopy cover	11.3	188%	5	12	200%	5	6	100%	5
Native grass cover	31	148%	5	35	167%	5	33	157%	5
Organic litter	65	135%	5	52	108%	5	38	79%	5
Large trees (euc plus non-euc)	39	103%	15	43	113%	15	27	71%	10
Coarse woody debris	510	101%	5	514	102%	5	335	66%	5
Non-native plant cover	4		10	35		3	15		5
Quality and availability of food and foraging habitat	10		10	10		10	10		10
Quality and availability of shelter	10		10	10		10	10		10
Site Condition Score			100			93			90
MAX Site Condition Score			*100*			*100*			*100*
Site Condition Score - out of 3			**3.00**			**2.79**			**2.70**
Size of patch			10			10			10
Connectedness			4			4			4
Context			4			4			4
Ecological Corridors			0			0			0
Role of site location to species overall population in the state			4			4			4
Threats to the species			15			15			15
Species mobility capacity			10			10			10
Site Context Score			47			47			47
MAX Site Context Score			*56*			*56*			*56*
Site Context Score - out of 3			**2.52**			**2.52**			**2.52**

Site Reference	Site 12 Raw Data	Site 12 Benchmark	Site 12 Score	Site 13 Raw Data	Site 13 Benchmark	Site 13 Score	Average %	Average Score
Recruitment of woody perennial species in EDL	1	100%	5	2	100%	5	100%	5.0
Native plant species richness - trees	6	100%	5	6	100%	5	100%	5.0
Native plant species richness - shrubs	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	13	186%	5	9	129%	5	129%	5.0
Native plant species richness - forbes	24	185%	5	22	169%	5	123%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	20.4	124%	5	22	133%	5	112%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	54	129%	5	45	107%	5	117%	5.0
Shrub canopy cover	13	217%	5	5.2	87%	5	183%	5.0
Native grass cover	24	114%	5	32	152%	5	143%	5.0
Organic litter	75	156%	5	50	104%	5	108%	5.0
Large trees (euc plus non-euc)	20	53%	10	20	53%	10	97%	12.1
Coarse woody debris	402	79%	5	354	70%	5	84%	5.0
Non-native plant cover	4		10	10		5		6.9
Quality and availability of food and foraging habitat	10		10	10		10		10.0
Quality and availability of shelter	10		10	10		10		10.0
Site Condition Score			95			90		94.0
MAX Site Condition Score			*100*			*100*		*100*
Site Condition Score - out of 3			**2.85**			**2.70**		**2.82**
Size of patch			10			10		10.0
Connectedness			4			4		4.0
Context			4			4		4.0
Ecological Corridors			0			0		0.0
Role of site location to species overall population in the state			4			4		4.0
Threats to the species			15			15		15.0
Species mobility capacity			10			10		10.0
Site Context Score			47			47		47.0
MAX Site Context Score			*56*			*56*		*56*
Site Context Score - out of 3			**2.52**			**2.52**		**2.52**

AU2 - Young Regrowth – preclear RE12.9-10.2

Site Reference	Benchmark	Site 5 Raw Data	Site 5 Benchmark	Site 5 Score	Site 7 Raw Data	Site 7 Benchmark	Site 7 Score	Site 9 Raw Data	Site 9 Benchmark	Site 9 Score
Recruitment of woody perennial species in EDL	100	2	100%	5	5	100%	5	3	100%	5
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5
Native plant species richness - grasses	7	15	214%	5	9	129%	5	13	186%	5
Native plant species richness - forbes	13	21	162%	5	16	123%	5	27	208%	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	19.5	118%	5	16.5	100%	5	23.8	144%	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	38.0	90%	5	21.0	50%	2	21.2	50%	5
Shrub canopy cover	6	6.8	113%	5	6.1	102%	5	5	83%	5
Native grass cover	21	32	152%	5	21	100%	5	40	190%	5
Organic litter	48	44	92%	5	51	106%	5	50	104%	5
Large trees (euc plus non-euc)	38	9	24%	5	4	11%	5	5	13%	5
Coarse woody debris	506	445	88%	5	360	71%	5	729	144%	5
Non-native plant cover	0	15		5	20		5	10		5
Quality and availability of food and foraging habitat	N/A	10		10	10		10	10		10
Quality and availability of shelter	N/A	10		10	10		10	10		10
Site Condition Score				85			82			85
MAX Site Condition Score				*100*			*100*			*100*
Site Condition Score - out of 3				**2.55**			**2.46**			**2.55**
Size of patch	10	>200 ha		10			10			10
Connectedness	5	24%		4			4			4
Context	5	17.54%		4			4			4
Ecological Corridors	6			0			0			0
Role of site location to species overall population in the state	5			4			4			4
Threats to the species	15			15			15			15
Species mobility capacity	10			10			10			10
Site Context Score				47			47			47
MAX Site Context Score				*56*			*56*			*56*
Site Context Score - out of 3				**2.52**			**2.52**			**2.52**

Site Reference	Site 14 Raw Data	Site 14 Benchmark	Site 14 Score	Site 15 Raw Data	Site 15 Benchmark	Site 15 Score	Site 18 Raw Data	Site 18 Benchmark	Site 18 Score	Average %	Average Score
Recruitment of woody perennial species in EDL	100	100%	5	4	100%	5	3	100%	5	100%	5.0
Native plant species richness - trees	6	100%	5.0	6	100%	5.0	6	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	100%	5	7	100%	5	7	100%	5	100%	5.0
Native plant species richness - grasses	9	129%	5	10	143%	5	8	114%	5	214%	5.0
Native plant species richness - forbes	14	108%	5	21	162%	5	21	162%	5	162%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	17	103%	5	19.5	118%	5	18.7	113%	5	118%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	19.2	46%	2	27.5	65%	5	39.0	93%	5	90%	4.0
Shrub canopy cover	5.8	97%	5	5	83%	5	6	100%	5	113%	5
Native grass cover	75	357%	5	27	129%	3	27	129%	5	152%	4.7
Organic litter	42	88%	5	52	108%	5	45	94%	5	92%	5.0
Large trees (euc plus non-euc)	18	47%	5	22	58%	10	39	103%	15	24%	7.5
Coarse woody debris	526	104%	5	490	97%	5	376	74%	5	88%	5.0
Non-native plant cover	4		10	3		10	5		5		6.7
Quality and availability of food and foraging habitat	10		10	10		10	10		10		10.0
Quality and availability of shelter	10		10	10		10	10		10		10.0
Site Condition Score			87			93			95		87.8
MAX Site Condition Score			*100*			*100*			*100*		*100*
Site Condition Score - out of 3			**2.61**			**2.79**			**2.85**		**2.64**
Size of patch			10			10			10		10.0
Connectedness			4			4			4		4
Context			4			4			4		4
Ecological Corridors			0			0			0		0
Role of site location to species overall population in the state			4			4			4		4
Threats to the species			15			15			15		15
Species mobility capacity			10			10			10		10
Site Context Score			47			47			47		47.0
MAX Site Context Score			*56*			*56*			*56*		*56*
Site Context Score - out of 3			**2.52**			**2.52**			**2.52**		**2.52**

AU 3 - Pastural Grassland – preclear RE12.9-10.2

Site Reference	Benchmark	Site 6 Raw Data	Site 6 Benchmark	Site 6 Score	Site 8 Raw Data	Site 8 Benchmark	Site 8 Score	Site 10 Raw Data	Site 10 Benchmark	Site 10 Score
Recruitment of woody perennial species in EDL	100	2	100%	5	1	100%	5	2	100%	5
Native plant species richness - trees	6	6	100%	5	6	100%	5	6	100%	5
Native plant species richness - shrubs	7	7	100%	5	7	100%	5	7	100%	5
Native plant species richness - grasses	7	7	100%	5	7	100%	5	8	114%	5
Native plant species richness - forbes	13	20	154%	5	19	146%	5	15	115%	5
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	14.0	85%	5	16.5	100%	5	13.5	82%	5
Tree canopy cover (average of emergent, canopy, sub-canopy)	42	22	52%	5	24	57%	5	22	52%	5
Shrub canopy cover	6	6.4	107%	5	5.2	87%	5	5.9	98%	5
Native grass cover	21	29	138%	5	35	167%	5	25	119%	5
Organic litter	48	37	77%	5	44	92%	5	33	69%	5
Large trees (euc plus non-euc)	38	5	13%	5	4	11%	5	4	11%	5
Coarse woody debris	506	328	65%	5	333	66%	5	312	62%	5
Non-native plant cover	0	30		3	25		5	10		5
Quality and availability of food and foraging habitat	N/A	5		5	5		5	5		5
Quality and availability of shelter	N/A	5		5	5		5	5		5
Site Condition Score				73			75			75
MAX Site Condition Score				*100*			*100*			*100*
Site Condition Score - out of 3				**2.19**			**2.25**			**2.25**
Size of patch	10	>200 ha		10			10			10
Connectedness	5	24%		4			4			4
Context	5	17.54%		4			4			4
Ecological Corridors	6			0			0			0
Role of site location to species overall population in the state	5			4			4			4
Threats to the species	15			15			15			15
Species mobility capacity	10			10			10			10
Site Context Score				47			47			47
MAX Site Context Score				*56*			*56*			*56*
Site Context Score - out of 3				**2.52**			**2.52**			**2.52**

Site Reference	Site 16 Raw Data	Site 16 Benchmark	Site 16 Score	Site 17 Raw Data	Site 17 Benchmark	Site 17 Score	Site 19 Raw Data	Site 19 Benchmark	Site 19 Score	Average %	Average Score	**Total average % benchmark**	**Total average score**
Recruitment of woody perennial species in EDL	2	100%	5	1	100%	5	1	100%	5	100%	5.0	100%	5.0
Native plant species richness - trees	6	100%	5	6	100%	5	6	100%	5	100%	5.0	100%	5.0
Native plant species richness - shrubs	7	100%	5	7	100%	5	7	100%	5	200%	5.0	133%	5.0
Native plant species richness - grasses	8	114%	5	7	100%	5	8	114%	5	107%	5.0	150%	5.0
Native plant species richness - forbes	16	123%	5	13	100%	5	13	100%	5	123%	5.0	136%	5.0
Tree canopy height (average of emergent, canopy, sub-canopy)	16.5	100%	5	15.5	94%	5	14.5	88%	5	91%	5.0	107%	5.0
Tree canopy cover (average of emergent, canopy, sub-canopy)	36	86%	5	32	76%	5	23	55%	5	63%	5.0	90%	4.7
Shrub canopy cover	6	100%	5	6	100%	5	6.3	105%	5	99%	5.0	132%	5.0
Native grass cover	22	105%	5	35	167%	5	27	129%	5	137%	5.0	144%	4.9
Organic litter	50	104%	5	37	77%	5	42	88%	5	84%	5.0	95%	5.0
Large trees (euc plus non-euc)	2	5%	5	3	8%	5	4	11%	5	10%	5.0	44%	8.2
Coarse woody debris	367	73%	5	378	75%	5	412	81%	5	70%	5.0	81%	5.0
Non-native plant cover	20		5	25		5	20		5	0%	4.7	0%	6.1
Quality and availability of food and foraging habitat	5		5	5		5	5		5		5.0	0%	8.3
Quality and availability of shelter	5		5	5		5	10		10		5.8	0%	8.6
Site Condition Score			75			75			80		75.5		85.8
MAX Site Condition Score			*100*			*100*			*100*		*100*		*100*
Site Condition Score - out of 3			**2.25**			**2.25**			**2.40**		**2.27**		**2.57**
Size of patch			10			10			10		10		10.0
Connectedness			4			4			4		4		4.0
Context			4			4			4		4		4.0
Ecological Corridors			0			0			0		0		0.0
Role of site location to species overall population in the state			4			4			4		4		4.0
Threats to the species			15			15			15		15		15.0
Species mobility capacity			10			10			10		10		10.0
Site Context Score			47			47			47		37		47
MAX Site Context Score			*56*			*56*			*56*		*56*		*56*
Site Context Score - out of 3			**2.52**			**2.52**			**2.52**		**1.98**		**2.52**

Species Stocking Rate (SSR)						**AU1**	**AU2**	**AU3**	
Presence detected on or adjacent to site (neighbouring property with connecting habitat)	Score	0	5	10		10	10	10	
		No	Yes - adjacent	Yes - on site					
Species usage of the site (habitat type & evidenced usage)	Score	0	5	10	15	15	15	15	
		Not habitat	Dispersal	Foraging	Breeding				
Approximate density (per ha)	Score	0	10	20	30	20	20	20	
		0%	low	medium	high				
Role/importance of species population on site*	Score (*Total from supplementary table below*)	0	5	10	15	5	5	5	
		0	5 - 15	20 - 35	40 - 45				
Total SRR score (out of 70)						50	50	50	
SRR Score (out of 4)						**2.9**	**2.9**	**2.9**	

***SSR Supplementary Table**				**AU1**	**AU2**	**AU3**	
*Key source population for breeding	Score	0	10	0	0	0	
		No	Yes/ Possibly				
*Key source population for dispersal	Score	0	5	5	5	5	
		No	Yes/ Possibly				
*Necessary for maintaining genetic diversity	Score	0	15	0	0	0	
		No	Yes/ Possibly				
*Near the limit of the species range	Score	0	15	0	0	0	
		No	Yes				
	Total for SSR Supplementary Table			**5**	**5**	**5**	

Final habitat quality score (weighted)	**AU1**	**AU2**	**AU3**		**Average/ Final**
Site Condition score (out of 3)	2.82	2.64	2.27		2.57
Site Context Score (out of 3)	2.52	2.52	1.98		2.34
Species Stocking Rate Score (out of 4)	2.86	2.86	2.86		2.86
Habitat Quality score (out of 10)	*8.20*	*8.01*	*7.10*		*7.77*
Assessment Unit area (ha)	28.18	71.21	84.93		184.32
Total offset area (ha) for this MNES	184.31	184.31	184.31		184.31
Size Weighting	0.15	0.39	0.46		1.00
Weighted Habitat Quality Score	***1.25***	***3.09***	***3.27***		***7.62***

Appendix 34

Commonwealth Offset Assessment Guide
Koala

Offsets Assessment Guide

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

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	Koala
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

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

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Koala	**Area**	38.4	Hectares	PD Report
			Quality	**6**	Scale 0-10	
			Total quantum of impact	23.04	Adjusted hectares	
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	23.04	Adjusted hectares	184.3	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	184.3	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	25.15	109.14%	Yes	$2,000,000.00	rehabilitation plans
									Future area without offset (adjusted hectares)	184.3	**Future area with offset (adjusted hectares)**	184.3								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	5	**Future quality without offset (scale of 0-10)**	5	**Future quality with offset (scale of 0-10)**	7	2.00	71%	1.42	1.36				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Appendix 35

Commonwealth Offset Assessment Guide
Grey-headed Flying-Fox

Offsets Assessment Guide

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

This guide relies on Macros being enabled in your browser.

Matter of National Environmental Significance	
Name	GHFF
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	**0.2%**

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

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Grey-headed flying-fox	**Area**	37.92	Hectares	PD Report
			Quality	**5**	Scale 0-10	
			Total quantum of impact	18.96	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset**		**Risk of loss (%) with offset**									
									Future area without offset (adjusted hectares)	0.0	**Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	18.96	Adjusted hectares	184.3	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	184.3	**Risk of loss (%) without offset**	0%	**Risk of loss (%) with offset**	0%	0.00	90%	0.00	0.00	50.29	265.25%	Yes	$2,000,000.00	rehabilitation plans
									Future area without offset (adjusted hectares)	184.3	**Future area with offset (adjusted hectares)**	184.3								
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	4	**Future quality without offset (scale of 0-10)**	4	**Future quality with offset (scale of 0-10)**	8	4.00	71%	2.84	2.73				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			