

APPENDIX 10: MHQAT RESULTS – GREATER GLIDER

IMPACT SITE

Assessment Unit - Regional Ecosystem		RE 12.5.4 <i>Eucalyptus latissinensis</i> +/- <i>Corymbia intermedia</i> , <i>C. trachyphloia</i> subsp. <i>trachyphloia</i> , <i>Angophora leiocarpa</i> , <i>Eucalyptus exserta</i> woodland. Occurs on complex of remnant Tertiary surfaces and Cainozoic and Mesozoic sediments. Contains <i>Palustrine</i> . (BVG1M.9g)												
Transect No.	Maximum Score	Benchmark	Transect 1				Transect 2				Transect 3			
Site condition	Score	12.5.4	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			
BioCondition														
Recruitment of woody perennial species in EDL	5	100	40	40	3.00	33	33	3.00	100	100	5.00	5.00		
Native plant species richness - trees	5	5	10	200	5.00	12	240	5.00	11	220	5.00	5.00		
Native plant species richness - shrubs	5	9	4	44	2.50	4	44	2.50	2	22	0.00	0.00		
Native plant species richness - grasses	5	7	4	57	2.50	4	57	2.50	4	57	2.50	2.50		
Native plant species richness - forbes	5	18	3	17	0.00	8	44	2.50	6	33	2.50	2.50		
Tree emergent height		N/A												
Tree canopy height		17	18	106	5.00	19	112	5.00	17	100	5.00	5.00		
Tree subcanopy height		8	10	125	5.00	8	100	5.00	10	125	5.00	5.00		
Average canopy height	5				5.00			5.00			5.00	5.00		
Tree emergent canopy cover		N/A										N/A		
Tree canopy cover		37	24.8	67	5.00	54.8	148	5.00	58.8	159	5.00	5.00		
Tree subcanopy cover		14	45	321	3.00	44.5	318	3.00	51.5	368	3.00	3.00		
Average canopy cover	5				4.00			4.00			4.00	4.00		
Shrub canopy cover	5	19	20.3	107	5.00	6.9	36	3.00	19.5	103	5.00	5.00		
Native grass cover	5	42	16	38	1.00	6	14	1.00	7	17	1.00	1.00		
Organic litter	5	29	36	124	5.00	19	66	5.00	23	79	5.00	5.00		
Coarse woody debris	5	416	283	68	5.00	215	52	5.00	488	117	5.00	5.00		
Large trees (euc plus non-euc)	15	27	18	67	10.00	24	89	10.00	32	119	15.00	15.00		
Non-native plant cover	10	0	70	N/A	0.00	80	N/A	0.00	75	N/A	0.00	0.00		
Total (BioCondition)	80.00				48.00			48.50			55.00			
Weighted (BioCondition) (30%)					18.00			18.19			20.63			
Quality and availability of food and foraging habitat - species richness (Corymbia, Eucalyptus, Angophora)	10	5	4	80	4.00	4	80	4.00	4	80	4.00	4.00		
Quality and availability of food and foraging habitat - stem density	10	N/A	77	385	6.00	68	340	6.00	136	680	6.00	6.00		
Weighted food and foraging score (35%)					17.50			17.50			17.50			
Quality and availability of shelter - tree metrics (35%)	10	30	24.00	80	28.00	24.00	80	28.00	29.00	97	33.83			
Site Condition Score (per transect)					63.5			63.7			72.0			
MAX Site Condition Score (per transect)					100.0			100.0			100.0			
Site Condition Score (average)					66.4									
MAX Site Condition Score					100									
Site Condition Score - out of 3					1.99									

Site Context	Max Score	Score
Size of patch	10	5
Connectedness	5	2
Context	5	2
Ecological Corridors	6	0
Role of site location to total population	5	5
Threats to the species	15	7
Species mobility capacity	10	7
Site Context Score		28
MAX Site Context Score		56
Site Context Score - out of 3		1.50

Species Stocking Rate (SSR)	Score
Presence detected on or adjacent to the site	0 No 5 10 Adjacent On site
Species usage of the site	0 5 10 15 Not habitat Dispersal Foraging Breeding
Approximate density	0 10 20 30 0% Low Medium High
Role of species population (on the site)*	0 5 10 15 0 5-15 20-35 40-45
SSR Score	20.0
MAX SSR Score	70
SSR Score - out of 4	1.14

*SSR Supplementary Table	Score
*Key source population for breeding	0 10 No Yes/ Possibly
*Key source population for dispersal	0 5 No Yes/ Possibly
*Necessary for maintaining genetic diversity	0 15 No Yes/ Possibly
*Near the limit of the species range	0 15 No Yes
SSR Supplementary Score	5.00

Final habitat quality score (weighted)	12.5.4
Site Condition score (out of 4)	1.99
Site Context Score (out of 3)	1.50
Species Stocking Rate Score (out of 3)	1.14
Habitat Quality score (out of 10)	4.63
*area weighting not applicable	
TOTAL SCORE (10)	5

OFFSET SITE - EXISTING

Assessment Unit - Regional Ecosystem		RE 12.12.5 <i>Corymbia citriodora</i> subsp. <i>variegata</i> , <i>Eucalyptus crebra</i> woodland on Mesozoic to Proterozoic igneous rocks																				
Transect No.	Max. Score	Benchmark 12.12.5	BC02				BC03				BC05				BC06				BC07			
Site condition		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score			
BioCondition																						
Recruitment of woody perennial species in EDL	5	100	100	100	5.00	100	100	5.00	100	100	5.00	100	100	5.00	100	100	5.00	100	100	5.00		
Native plant species richness - trees	5	5	3	60	2.50	6	120	5.00	5	100	5.00	4	80	2.50	3	60	2.50	3	60	2.50		
Native plant species richness - shrubs	5	9	5	56	2.50	12	133	5.00	9	100	5.00	6	67	2.50	2	22	0.00					
Native plant species richness - grasses	5	11	7	64	2.50	9	82	2.50	9	82	2.50	7	64	2.50	6	55	2.50					
Native plant species richness - forbes	5	17	21	124	5.00	15	88	2.50	22	129	5.00	14	82	2.50	10	59	2.50					
Tree emergent height		N/A																				
Tree canopy height		22	N/A			N/A			N/A			N/A			N/A			N/A				
Tree subcanopy height		9	N/A			N/A			N/A			N/A			N/A			N/A				
Average canopy height	5	15.5	13.5	87	5.00	12	77	5.00	11.5	74	5.00	9.5	61	3.00	9	58	3.00					
Tree emergent canopy cover		N/A																				
Tree canopy cover		41	N/A			N/A			N/A			N/A			N/A			N/A				
Tree subcanopy cover		10	N/A			N/A			N/A			N/A			N/A			N/A				
Average canopy cover	5	25.5	30.95	121	5.00	23.85	94	5.00	41.1	161	5.00	24.45	96	5.00	14.75	58	3.00					
Shrub canopy cover	5	3	4.7	157	5.00	6.1	203	3.00	14.1	470	3.00	1	33	3.00	4.3	143	5.00					
Native grass cover	5	35	29	83	3.00	30.2	86	3.00	25.4	73	3.00	54	154	5.00	37	106	5.00					
Organic litter	5	35	49	140	5.00	8	23	3.00	32.4	93	5.00	12.4	35	3.00	5	14	3.00					
Coarse woody debris	5	578	230	40	2.00	570	99	5.00	520	90	5.00	330	57	5.00	260	45	2.00					
Large trees (euc plus non-euc)	15	29	0	0	0.00	1	3	5.00	1	3	5.00	0	0	0.00	1	3	5.00					
Non-native plant cover	10	0	5	N/A	5.00	20	N/A	5.00	10	N/A	5.00	10	N/A	5.00	5	N/A	5.00					
Total (BioCondition)		80.00			47.50			54.00			58.50			44.00			43.50					
Weighted (BioCondition) (30%)					17.81			20.25			21.94			16.50			16.31					
Quality and availability of food and foraging habitat - species richness (Corymbia, Eucalyptus, Angophora)	10	4	2	50	2.00	1	25	1.00	3	75	3.00	1	25	1.00	1	25	1.00					
Quality and availability of food and foraging habitat - stem density	10	N/A	35	175	4.00	37	185	6.00	58	290	6.00	31	155	4.00	31	155	4.00					
Weighted food and foraging score (35%)					10.50			12.25			15.75			8.75			8.75					
Quality and availability of shelter - tree metrics (35%)		25	30	12.50	42	14.58	20.00	67	23.33	20.00	67	23.33	10.50	35	12.25	13.50	45	15.75				
Site Condition Score (per transect)					42.90			55.83			61.02			37.50			40.81					
MAX Site Condition Score (per transect)					100.0			100.0			100.0			100.0			100.0					
Site Condition Score (average)					47.6																	
MAX Site Condition Score					100																	
Site Condition Score - out of 3					1.43																	

Assessment Unit 2 - NON-REMNANT		Non-remnant vegetation (cleared and disturbed areas) (pre-clearing RE 12.12.5)								
Transect No.	Maximum Score	Benchmark 12.12.5	Transect BC01				Transect BC04			
Site condition		Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score
BioCondition										
Recruitment of woody perennial species in EDL	5	100	100	100	5.00	0	0	0.00		
Native plant species richness - trees	5	5	3	60	2.50	1	20	0.00		
Native plant species richness - shrubs	5	9	3	33	2.50	0	0	0.00		
Native plant species richness - grasses	5	11	7	64	2.50	4	36	2.50		
Native plant species richness - forbes	5	17	8	47	2.50	5	29	2.50		
Tree emergent height		N/A								
Tree canopy height		22	N/A			N/A				
Tree subcanopy height		9	N/A			N/A				
Average canopy height	5	15.5	10	65	3.00	4	26	3.00		
Tree emergent canopy cover		N/A								
Tree canopy cover		41	N/A			N/A				
Tree subcanopy cover		10	N/A			N/A				
Average canopy cover	5	25.5	0	0	0.00	0	0	0.00		
Shrub canopy cover	5	3	0	0	0.00	0	0	0.00		
Native grass cover	5	35	59	169	5.00	70.6	202	5.00		
Organic litter	5	35	0	0	0.00	3.6	10	3.00		
Coarse woody debris	5	578	200	35	2.00	330	57	5.00		
Large trees (euc plus non-euc)	15	29	0	0	0.00	0	0	0.00		
Non-native plant cover	10	0	40	N/A	3.00	15	N/A	5.00		
Total (BioCondition)		80.00			28.00			26.00		
Weighted (BioCondition) (30%)					10.50			9.75		
Quality and availability of food and foraging habitat - species richness (Corymbia, Eucalyptus, Angophora)	10	4	1	25	1.00	1	25	1.00		
Quality and availability of food and foraging habitat - stem density	10	N/A	35	175	4.00	37	185	6.00		
Weighted food and foraging score (35%)					8.75			12.25		
Quality and availability of shelter - tree metrics (35%)		25	25	5.50	18	6.42	3.00	10	3.50	
Site Condition Score (per transect)					25.67			25.50		
MAX Site Condition Score (per transect)					125.0			100.0		
Site Condition Score (average)					25.6					
MAX Site Condition Score					100					
Site Condition Score - out of 3					0.77					

Site Context	Max Score	Data	Score
Size of patch	10	207 (135 B)	7
Connectedness	5	23%	2
Context	5	15%	2
Ecological Corridors	6	within	6
Role of site location to total population	5	Not critical	1
Threats to the species	15	Moderate	7
Species mobility capacity	10	Moderate	7
Site Context Score			32
MAX Site Context Score			56
Site Context Score - out of 3			1.71

Species Stocking Rate (SSR)	Score	Score (AU1)	Score (AU2)
Presence detected on or adjacent to the site	0 No	5 Adjacent	10 On site
Species usage of the site	0	5 Dispersal	10 Foraging
Approximate density	0 0%	10 Low	20 Medium
Role of species population (on the site)*	0	5 5-15	10 15-30
SSR Score		30.0	35.0
MAX SSR Score		70	70
SSR Score - out of 4		1.71	2.00

*SSR Supplementary Table	Score	Score
*Key source population for breeding	0 No	10 Yes/ Possibly
*Key source population for dispersal	0 No	5 Yes/ Possibly
*Necessary for maintaining genetic diversity	0 No	15 Yes/ Possibly
*Near the limit of the species range	0 No	15 Yes
SSR Supplementary Score		20.00

Final habitat quality score (weighted)	AU1	AU2
Site Condition score (out of 4)	1.43	0.77
Site Context score (out of 3)	1.71	1.71
Species Stocking Rate score (out of 3)	1.71	2.00
Habitat Quality score (out of 10)	4.86	4.48
AU area	73	34
Site area	107	107
Area weighted score	3.31	1.42
TOTAL SCORE (10)	5	

OFFSET SITE - PROPOSED

Modified Habitat Quality Assessment Tool (MHQAT)
 PROPOSED OFFSET - GREATER GLIDER
 Highlight indicates measure predicted to increase with management in accordance
 with offset completion criteria

Assessment Unit 1 - Regional Ecosystem																	
RE 12.12.5 <i>Corymbia citrifolia</i> subsp. <i>variegata</i> , <i>Eucalyptus crebra</i> woodland on Mesozoic to Proterozoic igneous rocks																	
Transect No.	Max. Score	Benchmark 12.12.5	BC02			BC03			BC05			BC06			BC07		
Site condition			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score
BioCondition																	
Recruitment of woody perennial species in EDL	5	100	100	100	5.00	100	100	5.00	100	100	5.00	100	100	5.00	100	100	5.00
Native plant species richness - trees	5	5	5	100	5.00	5	100	5.00	5	100	5.00	5	100	5.00	5	100	5.00
Native plant species richness - shrubs	5	9	9	100	5.00	9	100	5.00	9	100	5.00	9	100	5.00	9	100	5.00
Native plant species richness - grasses	5	11	7	64	2.50	9	82	2.50	9	82	2.50	7	64	2.50	6	55	2.50
Native plant species richness - forbes	5	17	21	124	5.00	15	88	2.50	22	129	5.00	14	82	2.50	10	59	2.50
Tree emergent height		N/A															
Tree canopy height		22	N/A			N/A			N/A			N/A			N/A		
Tree subcanopy height		9	N/A			N/A			N/A			N/A			N/A		
Average canopy height	5	15.5	13.5	87	5.00	12.4	80	5.00	12.4	80	5.00	12.4	80	5.00	12.4	80	5.00
Tree emergent canopy cover		N/A				N/A			N/A			N/A			N/A		
Tree canopy cover		41	N/A			N/A			N/A			N/A			N/A		
Tree subcanopy cover		10	N/A			N/A			N/A			N/A			N/A		
Average canopy cover	5	25.5	30.95	121	5.00	23.85	94	5.00	41.1	161	5.00	24.45	96	5.00	20.4	80	5.00
Shrub canopy cover	5	3	4.7	157	5.00	6.1	203	3.00	14.1	470	3.00	3	100	5.00	4.3	143	5.00
Native grass cover	5	35	29	83	3.00	30.2	86	3.00	25.4	73	3.00	54	154	5.00	37	106	5.00
Organic litter	5	35	49	140	5.00	8	23	3.00	32.4	93	5.00	12.4	35	3.00	5	14	3.00
Coarse woody debris	5	578	230	40	2.00	570	99	5.00	520	90	5.00	330	57	5.00	260	45	2.00
Large trees (euc plus non-euc)	15	29	1	3	5.00	1	3	5.00	1	3	5.00	3	1	5.00	1	3	5.00
Non-native plant cover	10	0	5	N/A	5.00	20	N/A	5.00	10	N/A	5.00	10	N/A	5.00	5	N/A	5.00
Total (BioCondition)	80.00				57.50			54.00			58.50			58.00			55.00
Weighted (BioCondition) (30%)					21.56			20.25			21.94			21.75			20.63
Preferred habitat trees	10	4	4	100	10.00	4	100	10.00	4	100	10.00	4	100	10.00	4	100	10.00
Tree density	10	N/A	116	580	10.00	116	580	10.00	116	580	10.00	116	580	10.00	116	580	10.00
Habitat trees (35%)	30				35.00			35.00			35.00			35.00			35.00
Biocondition tree metrics (height, cover, etc) (35%)	30		20.00		23.33		20.00	67		23.33	20.00		67		23.33	20.00	67
Site Condition Score (per transect)					79.90			78.58			80.27			80.08			78.96
MAX Site Condition Score (per transect)					100.0			100.0			100.0			100.0			100.0
Site Condition Score (average)					79.6												
MAX Site Condition Score					100												
Site Condition Score - out of 3					2.39												

Assessment Unit 2 - NON-REMNANT													
Non-remnant vegetation (cleared and disturbed areas) (pre-clearing RE 12.12.5)													
Transect No.	Maximum Score	Benchmark 12.12.5	Transect BC01			Transect BC04							
Site condition			Raw Data	% Benchmark	Score	Raw Data	% Benchmark	Score					
BioCondition													
Recruitment of woody perennial species in EDL	5	100	100	100	5.00	0	0	0.00					
Native plant species richness - trees	5	5	5	100	5.00	5	100	5.00					
Native plant species richness - shrubs	5	9	9	100	5.00	9	100	5.00					
Native plant species richness - grasses	5	11	7	64	2.50	4	36	2.50					
Native plant species richness - forbes	5	17	8	47	2.50	5	29	2.50					
Tree emergent height		N/A											
Tree canopy height		22	N/A			N/A							
Tree subcanopy height		9	N/A			N/A							
Average canopy height	5	15.5	12.4	80	5.00	12.4	80	5.00					
Tree emergent canopy cover		N/A											
Tree canopy cover		41	N/A			N/A							
Tree subcanopy cover		10	N/A			N/A							
Average canopy cover	5	25.5	20.4	80	5.00	20.4	80	5.00					
Shrub canopy cover	5	3	3	100	5.00	3	100	5.00					
Native grass cover	5	35	59	169	5.00	70.6	202	5.00					
Organic litter	5	35	0	0	0.00	3.6	10	3.00					
Coarse woody debris	5	578	200	35	2.00	330	57	5.00					
Large trees (euc plus non-euc)	15	29	0	0	0.00	0	0	0.00					
Non-native plant cover	10	0	25	N/A	5.00	15	N/A	5.00					
Total (BioCondition)	80.00				47.00			48.00					
Weighted (BioCondition) (30%)					17.43			18.00					
Preferred habitat trees	10	4	4	100	10.00	4	100	10.00					
Tree density	10	N/A	116	580	10.00	116	580	10.00					
Weighted food and foraging score (35%)					35.00			35.00					
Quality and availability of shelter - tree metrics (35%)	25	25	15.00	50	17.50	15.00	50	17.50					
Site Condition Score (per transect)					70.13			70.50					
MAX Site Condition Score (per transect)					126.0			100.0					
Site Condition Score (average)					70.3								
MAX Site Condition Score					100								
Site Condition Score - out of 3					2.11								

Site Context	Max Score	Data	Score
Size of patch	10	314 (242 B)	10
Connectedness	5	23%	2
Context	5	15%	2
Ecological Corridors	6	within	6
Role of site location to total population	5	Critical	5
Threats to the species	15	Low	7
Species mobility capacity	10	High	10
Site Context Score			42
MAX Site Context Score			56
Site Context Score - out of 3			2.25

Species Stocking Rate (SSR)	Score	0	5	10	Score (AU1)	Score (AU2)
Presence detected on or adjacent to the site	Score	No	Adjacent	On site	5	5
Species usage of the site	Score	0	5	10	10	10
Approximate density	Score	0	10	20	30	10
Role of species population (on the site)*	Score	0	5	10	15	10
SSR Score		0	5-15	20-35	40-45	35.0
MAX SSR Score						70
SSR Score - out of 4						2.00

*SSR Supplementary Table	Score	0	10
*Key source population for breeding	Score	No	Yes/ Possibly
*Key source population for dispersal	Score	0	5
*Necessary for maintaining genetic diversity	Score	0	15
*Near the limit of the species range	Score	0	15
SSR Supplementary Score			20.00

Final habitat quality score (weighted)	AU1	AU2
Site Condition score (out of 4)	2.39	2.11
Site Context score (out of 3)	2.25	2.25
Species Stocking Rate score (out of 3)	2.00	2.00
Habitat Quality score (out of 10)	6.64	6.36
AU area	73	34
Site area	107	107
Area weighted score	4.53	2.02
TOTAL SCORE (10)	7	