

**PLANT COMMUNITIES OF GREENSTONE HILLS OF THE  
EASTERN GOLDFIELDS OF WESTERN AUSTRALIA AS  
ANALOGUES FOR THE REHABILITATION OF ROCKY WASTE  
DUMPS**

This thesis is presented for the degree of  
Doctor of Philosophy of Murdoch University

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Submitted by

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**Frontispiece:** Mt. Burges rising above the plain to the northwest of Coolgardie, Western Australia.

I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary educational institution.

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Shane Thomas Samuel Chalwell

## Appendix A

### SPECIES LIST

\* Introduced species

NB: \*\* Species keys to *Grevillea aculeolata* in *How to Know Western Australian Wildflowers* but the name has not been recognised in the Western Australian Herbarium census.

\*\*\* Species keys to *Eremophila websteri* in *How to Know Western Australian Wildflowers* but the name has not been recognised in the Western Australian Herbarium census.

P3 = Priority 3 species

#### Adiantaceae

*Cheilanthes lasiophylla*

*Cheilanthes sieberi ssp sieberi*

#### Poaceae

*Aristida contorta*

*Austrostipa sp.*

*Austrostipa blackii* P3

*Austrostipa elegantissima*

*Austrostipa puberula*

*Austrostipa scabra*

*Enneapogon caerulescens*

*Pentaschistis airoides*

*Poaceae sp. A*

*Poaceae sp. B*

*Triodia basedowii*

#### Dasypogonaceae

*Dasypogonaceae sp.*

#### Anthericaceae

*Thysanotus manglesianus*

## **Orchidaceae**

*Pterostylis aff. nana*

## **Casuarinaceae**

*Allocasuarina campestris*

*Casuarina pauper*

## **Proteaceae**

*Grevillea* sp \*\*

## **Santalaceae**

*Exocarpos aphyllus*

*Santalum spicatum*

*Santulum acuminatum*

## **Chenopodiaceae**

*Atriplex nummularia*

*Atriplex vesicaria*

*Enchylaena tomentosa*

*Maireana georgei*

*Maireana pentatropis*

*Maireana sedifolia*

*Maireana trichoptera*

*Maireana triptera*

*Rhagodia drummondii*

*Sclerolaena densiflora*

## **Amaranthaceae**

*Ptilotus exaltatus*

*Ptilotus holosericeus*

*Ptilotus obovatus*

## **Aizoaceae**

*Aizoaceae* sp.

*Portulacaceae*

*Calandrinia eremaea*

*Caryophyllaceae* sp.

*Spergularia diandra*

*Stellaria filiformis*

*Stellaria media*

## **Brassicaceae**

\**Carrichtera annua*

*Stenopetalum filifolium*

*Stenopetalum* sp.

## **Crassulaceae**

*Crassula colorata* var *acuminata*

## **Pittosporaceae**

*Pittosporaceae* sp.

## **Mimosaceae**

*Acacia acuminata*

*Acacia andrewsii*

*Acacia coolgardiensis* ssp *effusa*

*Acacia erinacea*

*Acacia merrallii*

*Acacia pachypoda*

*Acacia quadrimarginea*

*Acacia rendlei*

*Acacia tetragonophylla*

## **Caesalpiniaceae**

*Senna artemisoides* ssp *filifolia*

*Senna artemisoides* ssp *x artemisioides*

## **Papilionaceae**

\**Medicago* sp.

*Papilionaceae sp.*

## **Geraniaceae**

*Erodium cygnorum ssp cygnorum*

## **Zygophyllaceae**

*Zygophyllum billardierei*

*Zygophyllum halophilum*

*Zygophyllum iodocarpum*

*Zygophyllum reticulatum*

## **Rutaceae**

*Philotheca brucei ssp brucei*

## **Euphorbiaceae**

*Beyeria calycina var calycina*

*Euphorbia sp. A*

*Euphorbiaceae sp.*

*Poranthera microphylla*

*Ricinocarpos stylosus*

## **Stackhousiaceae**

*Stackhousia monogyna*

## **Sapindaceae**

*Dodonaea lobulata*

*Dodonaea microzyga*

*Dodonaea stenozyga*

## **Rhamnaceae**

*Cryptandra leucopogon*

*Pomaderris forrestiana*

*Trymalium myrtillus*

## **Malvaceae**

*Alyogyne hakeifolia*

*Sida calyxhymenia*

## **Dilleniaceae**

*Hibbertia pungens*

## **Violaceae**

*Hybanthus floribundus* ssp. *curvifolius*

*Thymelaeaceae*

*Pimelea spiculigera*

## **Myrtaceae**

*Calothamnus gilesii*

*Eucalyptus campaspe*

*Eucalyptus celastroides* ssp. *celastroides*

*Eucalyptus clelandii*

*Eucalyptus griffithsii*

*Eucalyptus oleosa*

*Eucalyptus torquata*

*Eucalyptus websteriana* ssp. *websteriana*

*Melaleuca sheathiana*

## **Haloragaceae**

*Haloragis trigonocarpa*

## **Apiaceae**

*Apiaceae* sp. *A*

*Daucus glochidiatus*

*Hydrocotyle pilifera* var. *glabrata*

*Trachymene ornata*



## **Primulaceae**

*\*Anagallis arvensis*

## **Loganiaceae**

*Phyllangium sulcatum*

## **Apocynaceae**

*Alyxia buxifolia*

## **Boraginaceae**

*Halgania cyanea*

## **Lamiaceae**

*Prostanthera incurvata*

*Prostanthera wilkieana*

*Westringia rigida*

## **Solanaceae**

*Solanum lasiophyllum*

*Solanum orbiculatum*

## **Myoporaceae**

*Eremophila aff.spectabilis*

*Eremophila alternifolia*

*Eremophila caerulea*

*Eremophila deserti*

*Eremophila gibbosa*

*Eremophila glabra ssp glabra*

*Eremophila granitica*

*Eremophila interstans ssp. virgata*

*Eremophila oldfieldii ssp angustifolia*

*Eremophila oppositifolia*

*Eremophila paisleyi*

*Eremophila parvifolia*

*Eremophila psilocalyx*  
*Eremophila pustulata*  
*Eremophila scoparia*  
*Eremophila serrulata*  
*Eremophila sp. A\*\*\**  
*Eremophila sp. B*

## **Campanulaceae**

*Wahlenbergia preissii*  
*Lobeliaceae*  
*Lobelia tenuior*

## **Goodeniaceae**

*Brunonia australis*  
*Dampiera trigona*  
*Goodenia concinna*  
*Goodeniaceae sp. A*  
*Goodeniaceae sp. B*  
*Goodeniaceae sp. C*  
*Scaevola spinescens*  
*Velleia cynopotamica*  
*Velleia rosea*  
*Velleia sp. A*  
*Velleia trinervis*

## **Asteraceae**

*Asteraceae sp. B*  
*Asteraceae sp. D*  
*Asteraceae sp. E*  
*Asteridea athrixioides*  
*Calotis hispidula*  
*Calotis sp.*  
*Cephalopterum drummondii*  
*Chrysocephalum puteale*  
*Chthonocephalus pseudevax*  
*Cotula cotuloides*

*Cratystylis conocephala*  
*Hyalosperma glutinosum ssp glutinosum*  
*\*Hypochaeris glabra*  
*Isoetopsis graminifolia*  
*Leucochrysum fitzgibbonii*  
*Millotia myosotidifolia*  
*Millotia tenuifolia*  
*Olearia muelleri*  
*Olearia pimeliodes*  
*Podolepis capillaris*  
*Podolepis lessonii*  
*Rhodanthe floribunda*  
*Rhodanthe haigii*  
*Rhodanthe heterantha*  
*Rhodanthe laevis*  
*Rhodanthe oppositifolia*  
*Rhodanthe pollackii*  
*Rhodanthe sp.*  
*Waitzia acuminata*

Soil Parameter	ALAN HILL			MT CARNAGE			M
	R	S	B	R	S	B	R
% GRAVEL	39.10	31.34	17.89	25.90	35.38	19.74	33.54
EC (dS/m)	0.24	0.28	0.11	0.22	0.12	0.17	0.13
pH	7.75	7.64	7.15	7.70	7.43	7.88	7.36
PO4( $\mu\text{g/g}$ )	6.00	16.33	2.00	3.00	2.00	2.67	3.00
NO3( $\mu\text{g/g}$ )	5.67	6.67	6.33	9.67	2.33	2.33	3.33
NH4( $\mu\text{g/g}$ )	6.67	11.33	8.00	7.67	7.00	4.67	9.00
Organic Carbon	1.79	2.76	1.34	1.95	1.02	0.97	1.87
TN ( $\mu\text{g/g}$ )	0.15	0.21	0.10	0.15	0.08	0.09	0.15
TP ( $\mu\text{g/g}$ )	183.33	203.33	106.67	150.00	106.67	103.33	213.33
Ni ( $\mu\text{g/g}$ )	75.73	56.33	99.10	77.07	102.97	231.23	148.33
Cr ( $\mu\text{g/g}$ )	186.93	95.93	253.23	211.07	292.97	399.50	257.73
Mg (cmol+/kg-1)	5.36	5.80	2.35	3.25	1.54	5.04	1.62
Ca (cmol+/kg-1)	35.60	43.45	7.39	37.05	16.53	44.13	6.33
Na (cmol+/kg-1)	0.41	0.10	0.18	0.07	0.22	0.40	0.24
K (cmol+/kg-1)	1.21	1.27	0.27	1.05	0.24	0.77	0.37
CEC (cmol+/kg-1)	42.58	50.62	10.20	41.41	18.52	50.34	8.56
ESP	0.97	0.20	1.81	0.16	1.18	0.80	2.76
Ca/Mg	6.64	7.49	3.14	11.40	10.74	8.76	3.90
Mg/Ca	0.15	0.13	0.32	0.09	0.09	0.11	0.26
SAND %	50.80	61.20	48.48	60.18	56.23	63.61	54.12
SILT %	33.57	25.05	25.05	21.70	18.17	25.96	30.29
CLAY %	15.63	13.75	26.47	18.12	25.60	10.44	15.59

R= RIDGE

S= SLOPE

B= BASE

SS= SOUTH SLOPE

T MORGAN		BULONG			JAURDI HILL		
S	B	R	S	B	R	S	B
48.61	24.99	23.48	20.49	27.82	26.39	28.80	30.42
0.10	0.05	0.12	0.10	0.22	0.16	0.06	0.07
6.94	6.61	7.05	7.06	7.73	7.35	6.85	6.71
3.00	2.00	3.00	2.67	3.33	4.00	2.00	3.00
3.33	3.00	2.67	5.00	3.00	2.67	3.33	6.67
8.00	6.00	6.33	8.67	4.33	6.67	8.33	12.00
1.05	1.23	1.03	1.63	1.26	1.49	1.14	0.56
0.10	0.10	0.09	0.12	0.12	0.12	0.10	0.06
203.33	140.00	133.33	173.33	140.00	190.00	173.33	190.00
142.30	108.77	282.33	451.40	518.17	70.87	55.33	70.87
292.07	275.63	588.13	870.27	839.07	114.97	133.50	115.50
1.55	1.33	1.80	5.18	3.52	2.63	1.98	1.61
4.28	4.58	6.40	5.80	42.45	29.63	6.28	4.45
0.33	0.23	0.21	0.24	0.34	0.29	0.27	0.27
0.34	0.32	0.26	0.35	1.04	0.52	0.34	0.37
6.50	6.45	8.67	11.57	47.34	33.06	8.87	6.70
5.02	3.53	2.37	2.04	0.71	0.86	3.10	4.03
2.76	3.46	3.56	1.12	12.08	11.27	3.18	2.76
0.36	0.29	0.28	0.89	0.08	0.09	0.31	0.36
65.78	64.81	71.82	55.33	61.86	57.27	55.52	55.44
25.21	24.91	17.12	21.99	27.82	29.74	22.27	28.31
9.01	10.28	11.06	22.67	10.32	13.00	22.21	16.25

MT MARION			MT ELLIS			EMU HILL	
R	S	B	R	S	B	R	S
42.41	41.92	27.85	21.45	24.18	13.38	26.02	22.52
0.13	0.13	0.11	0.08	0.13	0.05	0.06	0.04
7.29	7.15	7.04	7.28	7.43	7.04	6.86	6.25
2.67	2.00	2.33	2.00	3.00	2.00	3.00	2.67
2.33	3.00	2.00	2.67	3.33	2.00	2.67	2.67
7.67	10.33	6.33	6.00	8.33	4.67	7.33	9.00
1.18	2.07	1.54	0.97	1.07	0.51	0.67	1.22
0.09	0.13	0.11	0.08	0.09	0.04	0.06	0.11
163.33	176.67	163.33	180.00	170.00	130.00	383.33	316.67
352.17	460.20	200.30	72.30	46.53	34.73	45.33	47.67
480.30	576.50	298.93	146.57	72.13	32.10	84.60	104.93
3.42	6.75	2.90	1.47	1.15	1.22	0.68	0.79
9.79	9.84	9.94	6.51	7.68	5.77	3.18	4.40
0.31	0.35	0.32	0.35	0.36	0.34	0.35	0.37
0.37	0.35	0.52	0.29	0.24	0.10	0.50	0.42
13.88	17.29	13.68	8.62	9.43	7.44	4.71	5.98
2.22	2.02	2.31	4.06	3.81	4.55	7.38	6.25
2.86	1.46	3.43	4.43	6.68	4.72	4.71	5.55
0.35	0.69	0.29	0.23	0.15	0.21	0.21	0.18
64.65	54.04	54.73	55.43	69.28	72.70	70.04	63.07
22.52	24.00	21.90	26.62	18.82	17.13	18.95	21.57
12.83	21.95	23.37	17.95	11.91	10.17	11.00	15.36

B	COOLGARDIE GOLD			MT BURGESS			R
	R	S	B	R	S	B	
36.42	33.32	17.98	22.20	12.73	38.57	40.77	37.75
0.10	0.07	0.06	0.08	0.12	0.09	0.24	0.06
6.94	6.78	6.92	7.01	6.93	6.88	7.81	6.46
2.67	5.00	2.00	3.00	3.33	3.00	4.00	1.33
5.33	3.33	3.33	3.00	5.00	7.00	4.33	3.00
8.33	7.00	6.00	7.00	8.67	13.00	7.67	9.33
1.64	0.66	0.95	0.85	1.79	1.89	1.74	1.10
0.15	0.08	0.10	0.08	0.17	0.19	0.15	0.11
313.33	343.33	236.67	263.33	226.67	256.67	193.33	246.67
72.40	37.20	34.90	41.20	167.17	266.13	458.07	79.93
117.13	70.63	59.60	81.50	311.53	497.30	422.80	148.37
2.11	0.94	2.28	1.32	3.63	3.43	11.47	2.56
7.03	3.00	5.78	6.05	26.42	10.03	19.50	6.33
0.47	0.36	0.41	0.34	0.46	0.56	0.36	0.43
0.69	0.58	0.34	0.37	0.59	0.95	0.82	0.66
10.30	4.88	8.80	8.08	31.09	14.97	32.15	9.97
4.52	7.36	4.60	4.15	1.47	3.72	1.12	4.31
3.33	3.20	2.53	4.60	7.29	2.93	1.70	2.48
0.30	0.31	0.40	0.22	0.14	0.34	0.59	0.40
63.02	61.55	55.80	65.84	63.21	60.55	60.99	54.41
19.82	28.25	24.33	23.05	21.38	21.43	26.02	29.25
17.16	10.20	19.87	11.11	15.42	18.02	13.00	16.34

MT EATON			COMET HILL			ROCK WASTE D	
S	B	SS	R	S	B	NE Dump	NE Dump E
46.86	55.62	37.99	30.04	57.04	26.94	29.07	25.30
0.08	0.15	0.04	0.22	0.08	0.05	0.93	1.98
7.01	7.25	6.33	7.73	6.98	6.49	8.42	7.95
3.33	2.67	2.00	6.67	3.00	2.33	5.00	4.67
2.33	7.67	3.00	3.33	2.67	2.67	8.33	24.33
7.00	7.00	7.33	7.00	7.33	6.33	4.67	4.00
0.93	2.30	1.23	2.88	1.34	1.14	0.67	0.75
0.10	0.21	0.12	0.22	0.11	0.08	0.09	0.07
246.67	203.33	186.67	270.00	203.33	176.67	156.67	146.67
99.30	196.00	81.67	62.63	70.00	68.30	70.87	66.37
159.63	262.30	189.33	53.33	85.43	96.10	153.77	159.47
2.52	6.87	2.35	5.87	3.56	2.95	4.17	4.04
7.14	16.83	6.35	46.10	14.06	10.48	59.70	60.28
0.61	0.47	0.52	0.06	0.55	0.60	0.29	0.31
0.58	0.62	0.40	1.55	0.45	0.36	0.72	0.71
10.84	24.79	9.62	53.58	18.61	14.38	64.88	65.34
5.59	1.88	5.45	0.11	2.96	4.14	0.00	0.00
2.83	2.45	2.70	7.85	3.95	3.55	14.31	14.91
0.35	0.41	0.37	0.13	0.25	0.28	0.07	0.07
64.30	63.63	60.28	53.94	47.72	53.36	51.78	56.73
20.97	20.74	23.42	33.11	28.27	24.22	27.58	25.18
14.74	15.63	16.30	12.95	24.01	22.42	20.63	18.09



UMPS
SE Dump
21.60
1.88
7.69
20.33
7.67
3.33
0.44
0.06
303.33
62.80
79.53
3.15
38.23
0.19
0.42
41.99
0.00
12.13
0.08
57.25
27.42
15.33

Species recorded during the survey are listed alphabetically by genus and species. Species  
 Cover values: 1 - only 1 or 2 individuals present; 2 - <1% canopy cover; 3 - 1-4% c

SPECIES	COOLGARDIE GOLD			JAURDI HIL	
	R	S	B	R	S
<i>Acacia acuminata</i>			5		3
<i>Acacia andrewsii</i>					
<i>Acacia coolgardiensis</i> ssp <i>effusa</i>					
<i>Acacia erinacea</i>					
<i>Acacia merrallii</i>					
<i>Acacia pachypoda</i>					
<i>Acacia quadrimarginea</i>	4	4			5
<i>Acacia rendlei</i>					
<i>Acacia tetragonophylla</i>		2		2	
<i>Aizoaceae</i> sp.					
<i>Allocasuarina campestris</i>					3
<i>Alyogyne hakeifolia</i>					
<i>Alyxia buxifolia</i>					
<i>Anagallis arvensis</i>					
<i>Apiaceae</i> sp. A					
<i>Aristida contorta</i>					
<i>Asteraceae</i> sp. B					
<i>Asteraceae</i> sp. D					
<i>Asteraceae</i> sp. E					
<i>Asteridea athrixoides</i>					
<i>Atriplex nummularia</i>					
<i>Atriplex vesicaria</i>					
<i>Austrostipa</i> sp.			2		
<i>Austrostipa blackii</i>					
<i>Austrostipa elegantissima</i>			3	2	2
<i>Austrostipa puberula</i>	3	2		2	2
<i>Austrostipa scabra</i>					
<i>Beyeria calycina</i> var <i>calycina</i>		2			5
<i>Brunonia australis</i>					
<i>Calandrinia eremaea</i>					
<i>Calothamnus gilesii</i>					
<i>Calotis hispidula</i>					
<i>Calotis</i> sp.					
<i>Carrichtera annua</i>					
<i>Casuarina cristata</i>					
<i>Cephalopterum drummondii</i>	2		2		
<i>Cheilanthes lasiophylla</i>	2				2
<i>Cheilanthes sieberi</i> ssp <i>sieberi</i>	2	2	2		2
<i>Chryptandra leucopogon</i>					2
<i>Chrysocephalum puteale</i>					
<i>Chthonocephalus pseudevax</i>					
<i>Cotula cotuloides</i>					

Crassula colorata var acuminata		2			
Cratystylis conocephala					
Dampiera trigona					
Dasyogonaceae sp.					2
Daucus glochidiatus		2	2	2	2
Dodonaea lobulata	3	4	5	3	
Dodonaea microzyga					4
Dodonaea stenozyga					
Enchylaena tomentosa					
Enneapogon caerulescens		3	2		
Eremophila aff.spectabilis					
Eremophila alternifolia					
Eremophila caerulea					
Eremophila deserti					
Eremophila gibbosa					
Eremophila glabra ssp glabra				4	
Eremophila granitica					
Eremophila oldfieldii ssp angustifolia				4	
Eremophila oppositifolia					
Eremophila paisleyi					
Eremophila parvifolia					
Eremophila psilocalyx					
Eremophila pustulata					
Eremophila scoparia					
Eremophila serrulata					2
Eremophila sp. B					
Eremophila sp.A	2	3	2		2
Eremophila virgata					
Erodium cygnorum ssp cygnorum					
Eucalyptus campaspe					
Eucalyptus celastroides					
Eucalyptus clelandii				4	
Eucalyptus griffithsii				7	
Eucalyptus oleosa			4		
Eucalyptus torquata					
Eucalyptus websteriana		3			3
Euphorbia sp A.					
Euphorbiaceae sp.					
Exocarpos aphyllus					
Goodenia concinna		2	2		2
Goodeniaceae sp. A					
Goodeniaceae sp. B			2		
Goodeniaceae sp. C					
Grevillea aculeolata					
Halgania cyanea					
Haloragis trigonocarpa			2		2
Hibbertia pungens					

Hyalosperma glutinosum ssp glutinosum					
Hybanthus floribundus ssp curvifolius					
Hydrocotyle pilifera var glabrata					
Hypochaeris glabra					
Isoetopsis graminifolia					
Leucochrysum fitzgibbonii					
Lobelia tenuior					
Maireana georgei				2	
Maireana pentatropis					
Maireana sedifolia					
Maireana trichoptera					
Maireana triptera					
Medicago sp.					
Melaleuca sheathiana					
Millotia myosotidifolia					
Millotia tenuifolia					
Olearia muelleri				3	
Olearia pimeliodes ssp. pimeliodes					
Papilionaceae sp.					2
Pentaschistis airoides	2	2	3	2	3
Philotheca brucei ssp brucei					
Phyllangium sulcatum					
Pimelea spiculigera					2
Pittosporaceae sp.					
Poaceae sp. A					
Poaceae sp. B				2	
Podolepis capillaris				2	
Podolepis lessonii	3	2	2		2
Podotrochea pollackii					
Pomaderris forrestiana					
Poranthera microphylla					
Prostanthera incurvata					
Prostanthera wilkieana	3	4			4
Pterostylis aff. nana					
Ptilotus exaltatus					
Ptilotus holosericeus					
Ptilotus obovatus	3	2	2	3	2
Rhagodia drummondii					
Rhodanthe floribunda					
Rhodanthe haigii					
Rhodanthe heterantha	2				
Rhodanthe laevis					
Rhodanthe oppositifolia					
Rhodanthe sp.					
Ricinocarpos stylosus					
Santalum spicatum					2
Santulum acuminatum					

<i>Scaevola spinescens</i>	2	2	2		
<i>Sclerolaena densiflora</i>				2	
<i>Senna artemisioides</i> ssp <i>artemisioides</i>					
<i>Senna artemisioides</i> ssp <i>filifolia</i>				2	2
<i>Sida calyxhymenia</i>			1		2
<i>Solanum lassiophyllum</i>	2	2	2	2	2
<i>Solanum orbiculatum</i>					
<i>Spergularia diandra</i>					
<i>Stackhousia monogyna</i>					
<i>Stellaria filiformis</i>					
<i>Stellaria media</i>					
<i>Stenopetalum filifolium</i>					
<i>Stenopetalum</i> sp.				2	
<i>Thysanotus manglesianus</i>	2				
<i>Trachymene ornata</i>					
<i>Triodia basedowii</i>					
<i>Trymalium myrtillus</i>					
<i>Velleia cycnopotamica</i>	2	2	2		
<i>Velleia rosea</i>					2
<i>Velleia</i> sp. A					
<i>Velleia trinervis</i>					
<i>Wahlenbergia preissii</i>					
<i>Waitzia acuminata</i>	2	2	2		
<i>Westringia rigida</i>					
<i>Zygophyllum billardierei</i>				2	
<i>Zygophyllum halophilum</i>					
<i>Zygophyllum iodocarpum</i>					
<i>Zygophyllum reticulatum</i>					

R= RIDGE

S= SLOPE

B= BASE

SS= SOUTH SLOPE

are listed under the location at which they were present  
 anopy cover; 4 - 5- 10% canopy cover; 5 - 11-25% canopy cover; 6 - 26-33% canopy cover

L	MT BURGES			EMU HILL			A
	B	R	S	B	R	S	
		5					
				3			2
3		7	5		5	7	
						2	2
8		2	2				2
				4			2
				2			
				2			2
							2
							4
							2
2							
				2			2
		2			2		2
						2	
2			2			3	
		2	2		4	2	

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	2	2					2
			2			2	2
						2	2
		2		2			3
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	2	2					
		2				2	
		2			2		
2	2	2		2	2		
		2					
		5			2		
2			2	2	2	2	2
				2			
				2	2		
	2						
2	2	2		2	2		
			3				
		2	2				2



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		2		2	2		2
2	2	2		2	2	2	
		2					
		2		2			
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	2	2		2	2		
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					1		
3		2			2	2	
			2				
2	2	2	2	2		1	2
		2					
		2	2	2			
						1	2
	2	2	2			2	
	2			2			2
		2	2		1	3	
				2			
					2		
	2	2	2				2
4				2			2
2	2	2			2	2	
					2	2	2
					1		
		2					

over; 10 - 91-100% canopy cove

MT EATON				MT ELLIS			
R	S	B	SS	R	S	B	R
		3	2	3			
			2				
		2					
6	7	2	2	3	7	4	4
				2			2
3			9	9	3		
				2	3	3	
		3					2
			2		2		2
							2
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			3				
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			2		2		
	2		2	2			
2	2			2	2	4	
	2						



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					2	2
2						2
	2					
4	4		4			
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2			2			
		3				3



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2	2		2	2		
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2	2		2			
		4		2		
2	2				4	2
					2	
		2				
2	2		2	2	2	
		2				2
						2

BULONG		MT CARNAGE			MT MARION		
S	B	R	S	B	R	S	B
			5	4		2	
	3				1		
2	2	2	2	2	3	2	2
							2
7	4		3				
	3	2	3		2	1	
3	2		2				
3	2	2		2	3	3	2
	2	2	2				2
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			2	4		2	
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		3	4				
	4	2					

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						1	
	2	2	2	2	2	1	
		2		2			2
	2						2
							2
		4	2	2	2	2	2
			2				
	1	2					
2	2				3	4	3
4							
	2	2	2				
	2	2	2	2			1
	2	3	2	2			2
	1						
	2	2					
2					2	2	
						2	
3	3				2	2	2

2	2	2	2	3	3	2	2
	2	2		2			2
2	3	3	2	2	2		2
2	2						
			2				
2			2		2	2	2
			2	2	2		2
	2				2		
		2	2	2	2	2	2
	2	2	2	2	2		2