MUSY – Forage Environmental Assessment

Appendix B – MONITORED OUTCOMES

Monitored Outcomes

The attached tables provide the basis for evaluating programs on an annual and cumulative basis to determine if objectives are being met and progress is being made towards the attainment of the ecological goals proposed for adoption. The tables identify the mean and median values for measured values of species diversity, and ground surface cover.

Diversity is measured by *All Plants*, *Grasses*, and *Forbs*; and is expressed using the Shannon-Wiener Diversity Index H' calculated as:

$$H' = -\sum_{i=1}^{S} p_i \ln p_i$$

Where:

- n_i The number of individuals in species i; the abundance of species i.
- S The number of species, also called species richness
- N The total number of all individuals
- p_i The relative abundance of each species, calculated as the proportion of individuals of a given species to the total number of individuals in the community:

$$\frac{n_i}{N}$$

Ground surface cover measurements include percent cover by bare ground, litter, grasses, forbs, and native grass.

The proposed objectives (as described in Chapter One, Proposed Action, Goals, Objectives and Monitored Outcomes) are to maintain or improve existing conditions from the five-year (2002-2007) mean. Maintenance would equate to the five-year mean +/- two-times the standard error. In general, an improvement would equate to a value of greater than the five-year mean *plus* two times the standard error. Impairment would equate to the five-year mean *minus* two times the standard error. However, in the case of bare ground an improvement would equate to the five-year mean *minus* two times the standard error; impairment would equate to the five-year mean *plus* two times the standard error. In general, bare ground is considered an undesirable characteristic.

In addition, other changes would have to be qualified to determine if the trend was indicating an improvement or impairment. For example, if a loss of litter is associated with an increase in bare ground then it would be a trend towards impairment, however if a reduction of cover by litter was associated with an increase in cover by native grass then it may indicate a trend towards

improvement. A single year's measurement may not necessarily indicate a trend, but may reflect a site specific event or be a function of the random location of the measurement. To account for annual fluctuation, measurements (either towards improvement or impairment) must occur outside the mean and +/- two times the standard error for two years in a row to be labeled a "trend".

The data is collected and evaluated in the fall and spring from most sites depicted in Figure 56. The evaluation will be entered into the Stewardship Register annually and made available to the public through the Valles Caldera website or by request. As described in Chapter One, the data is evaluated by site to detect site specific outcomes. Trends and measurements can also be evaluated by landscapes (by valle, pasture, or sub-basin) and by ecosites. Data will be evaluated cumulatively along with water quality data at the sub-basin watershed level every five years to evaluate the cumulative trend in ecological condition.

Management response to the monitored outcomes may include continuing existing management, adjustments in pasture rotation, placement of temporary fences or barriers, modifications of contracts, adjustments in timing or intensity of grazing, adjustments in numbers, or other practices designed to reduce or mitigate impairments or enhance and facilitate improvements.

The Trust may make minor adjustment to the monitoring protocols including installing additional monitoring sites or identifying additional parameters for measurement. Significant changes or adjustments in monitored outcomes or protocols such as the permanent elimination of a monitoring site or parameter for measurement could only be proposed following a review of a current State of the Preserve.

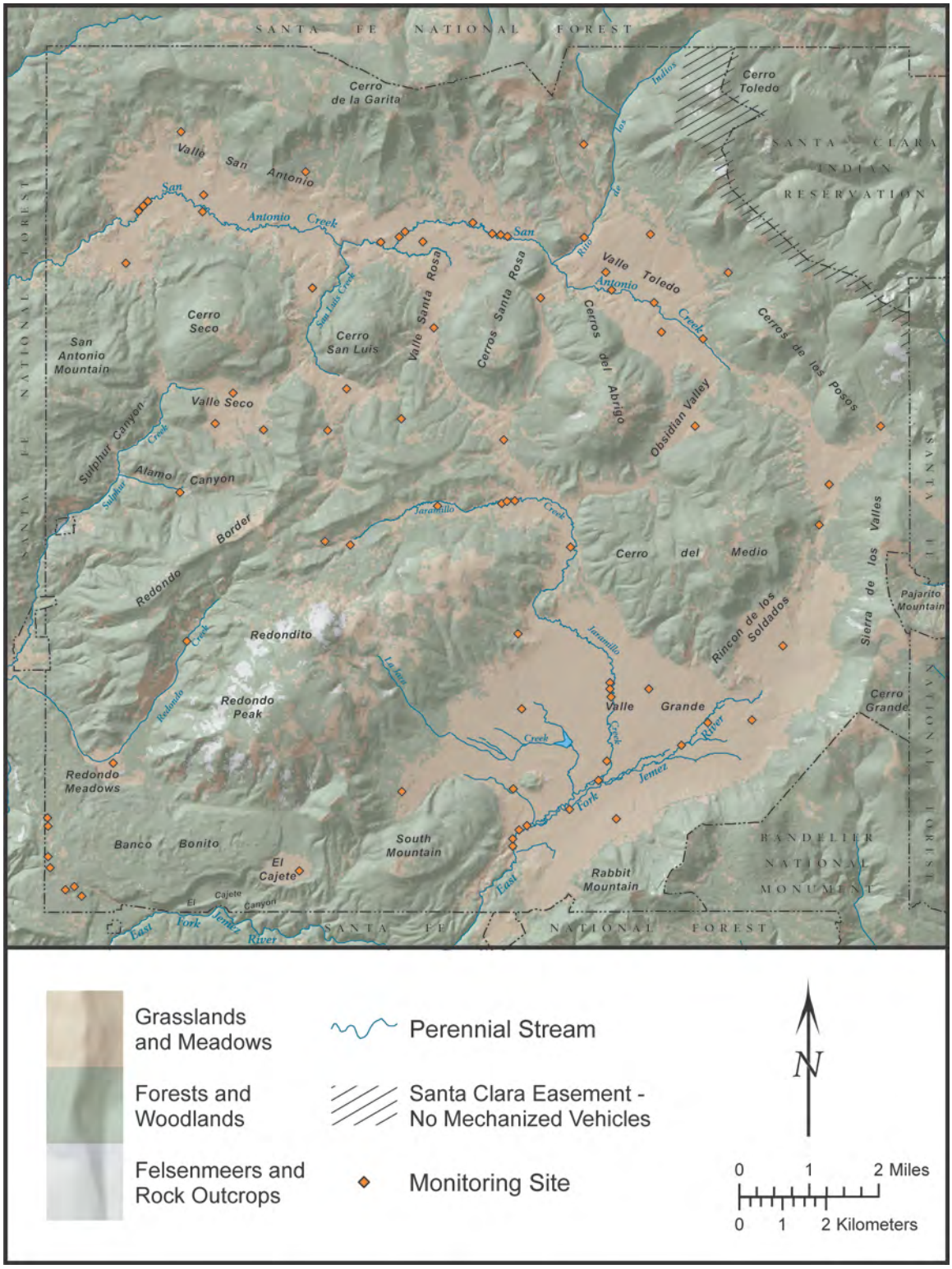

Figure 1 – Rangeland Ecological Monitoring Sites

Appendix B: Table 1 - Shannon-Wiener Diversity – All Plants					Dominant exotics abundance (% cover)			
Site	Mean	Median	SE	(Min)Acceptable	PHPR	POPA	POPR	TAOF
BBM1	2.00	2.04	0.11	1.78	12.28	0.17	52.11	9.94
BBM2	1.95	1.99	0.11	1.73	14.83	0.67	47.11	10.83
BBM3	1.55	1.63	0.14	1.28	34.33	7.78	56.94	19.78
BBT1	0.38	0.21	0.15	0.09	0.44	0.22	49.72	3.78
BBT2	0.34	0.32	0.10	0.15	1.56	0.44	43.89	2.94
BBT3	0.72	0.69	0.12	0.47	0.33	0.33	51.22	4.56
BBU1	0.20	0.18	0.09	0.03	1	0.56	15	1.5
BBU2	0.45	0.46	0.10	0.25	0.28	0.5	42.06	7.06
BBU3	0.30	0.25	0.09	0.12	6.2	0.67	58.67	4.87
GW1	2.34	2.52	0.10	2.15	0.39	0	47.44	2.5
GW10	2.14	2.15	0.04	2.06	0.67	0.33	25.67	0.67
GW11	2.25	2.29	0.04	2.16	2.33	0.94	50.72	6
GW12	2.58	2.58	0.09	2.39	4.5	0.31	69.63	13.44
GW13	2.31	2.32	0.08	2.16	0	0	1.25	1.83
GW14	2.57	2.62	0.08	2.41	0	0	0.56	0.11
GW15	2.81	2.82	0.06	2.68	0	0	21.33	14.67
GW2	2.74	2.75	0.07	2.61	0	0	49.5	6.67
GW3	2.31	2.28	0.06	2.19	1.87	1.27	34.8	13
GW4	2.32	2.27	0.12	2.08	2.47	0.4	57.73	6.47
GW5	2.31	2.31	0.05	2.22	0	0	26.8	0.33
GW6	2.43	2.40	0.06	2.31	0	0	5	0.33
GW7	2.52	2.60	0.07	2.38	0	0	24.53	1.73
GW8	2.27	2.19	0.05	2.16	0	0.07	20.33	0.4
GW9	2.50	2.41	0.08	2.34	0	0.07	47.47	7.33
MM1	2.51	2.55	0.04	2.42	0	0	10.78	10.06
MM2	2.43	2.50	0.05	2.33	1.87	0.6	37.2	5.13
MM3	2.34	2.40	0.04	2.26	0.33	3.67	57	6
MM4	2.24	2.27	0.05	2.14	17.56	0.72	55	13.06
MM5	2.44	2.41	0.06	2.31	0.08	0	14	6.67
MM6	2.37	2.38	0.04	2.28	0	0	12.27	2
MM7	2.28	2.30	0.06	2.17	0	0	40.67	10.67
MM8	2.40	2.44	0.04	2.32	10.33	0	22	2.67
MM9	1.57	1.56	0.08	1.41	0.33	0.06	47.94	7.11
MV1	1.98	1.99	0.04	1.89	43	3.94	63.44	16.78
MV10	2.56	2.57	0.06	2.43	1.5	0	35.08	5.5
MV11	2.73	2.73	0.04	2.64	0	0	64	6.61
MV12	2.55	2.58	0.04	2.47	37.19	1.19	42.76	14.76
MV13	2.55	2.58	0.04	2.48	2.13	0	29.47	2.8
MV14	2.57	2.56	0.03	2.51	1.08	0	43.17	19.08
MV15	2.52	2.51	0.03	2.46	0.06	0	22.17	4.94
MV16	2.02	2.14	0.13	1.77	14.61	0.5	48.94	8.83
MV17	2.35	2.39	0.04	2.26	0.5	0.5	34.5	3.5
MV18	2.73	2.77	0.05	2.64	0.17	0	42.83	10.67
MV19	1.80	1.89	0.16	1.49	32.11	4.06	56.39	17.5
MV2	2.35	2.32	0.05	2.25	0	0	9.27	3.73

MV20	2.43	2.38	0.04	2.35	0.67	1.33	40	12.67
MV3	2.46	2.55	0.06	2.34	0	0	46.17	11.17
MV4	2.81	2.82	0.03	2.75	0	0	0	0
MV5	2.52	2.53	0.04	2.43	0.06	0	41.44	0.06
MV6	2.55	2.55	0.04	2.47	0	0	23.67	1.61
MV7	2.44	2.43	0.07	2.30	0	0	32.75	3
MV8	2.08	2.08	0.06	1.97	10.5	1.61	73.17	14.44
MV9	2.40	2.44	0.05	2.31	0	0	14.67	3.13
RS10	2.83	2.82	0.05	2.73	0	0	0	0
RS11	2.90	2.91	0.09	2.71	0	0	2.11	0
RS12	2.35	2.35	0.08	2.19	0	0	4.67	0.14
RS13	2.25	2.19	0.11	2.04	0	0	5.76	0.12
RS14	2.69	2.66	0.09	2.50	0	0	0	0
RS15	2.92	2.93	0.04	2.83	5.11	0.56	63.56	0.78
RS16C	2.71	2.70	0.04	2.64	0.11	0	39.67	6.78
RS17C	2.74	2.79	0.05	2.65	0	0	9.83	1
RS18C	2.86	2.87	0.08	2.70	0	0	4.78	0.33
RS1C1	2.48	2.47	0.04	2.41	0	0	13.67	0
RS1C2	2.47	2.54	0.05	2.36	0	0	42.89	11.78
RS1LE	2.31	2.34	0.04	2.24	1.33	1	58.67	17.67
RS1UE	2.18	2.15	0.06	2.07	10.06	0.06	31.06	9.44
RS2C	2.68	2.69	0.06	2.56	0.07	0	26.87	3.93
RS2LE	2.63	2.65	0.05	2.54	19.33	0.33	54.52	9.67
RS2UE	2.85	2.83	0.03	2.78	0	0	0	0
RS3C	2.52	2.52	0.03	2.45	0.07	0	47	3.8
RS3LE	2.48	2.45	0.04	2.39	10.57	0	38.9	1.71
RS3UE	2.63	2.65	0.04	2.55	0	0	13.52	0.76
RS4C	2.58	2.58	0.04	2.50	1.44	0	35.67	10.33
RS4LE	2.58	2.60	0.04	2.50	0	0	10.44	0.5
RS4UE	2.80	2.75	0.04	2.72	0	0	23.67	2.73
RS5C	2.95	2.91	0.05	2.85	0	0	4.44	1.67
RS5LE	2.74	2.75	0.06	2.62	0	0	0	0
RS5UE	2.72	2.69	0.04	2.63	0	0	0	0
RS5UE_02	2.44	2.48	0.07	2.29	0	0	35.67	4
RS6C	2.48	2.56	0.08	2.32	0	0	37.33	6.42
RS6LE	2.19	2.20	0.06	2.07	0.93	0.33	40.87	6.4
RS6UE	2.64	2.48	0.09	2.47	34.5	0	38.78	1.67
RS7C	2.48	2.47	0.05	2.39	0	0	1.83	0.5
RS8C	2.26	2.27	0.04	2.17	4.61	0.67	70.22	10.11
RS9	2.77	2.76	0.06	2.65	0	0	1.67	0.33
VC02	1.53	1.80	0.28	0.97	3.67	0	68	12
VC04	1.19	1.13	0.18	0.83	2	0	73	1.67

Appendix B: Table 2 – Shannon-Wiener Diversity Index - Forbs

Site	Mean	Median	SE	(Min)Acceptable
BBM1	1.32	1.22	0.13	1.07
BBM2	0.91	1.01	0.14	0.63
BBM3	0.63	0.69	0.14	0.34
BBT1	0.00	0.00	0.00	0.00
BBT2	0.00	0.00	.	
BBT3	0.00	0.00	0.00	0.00
GW1	1.95	1.97	0.05	1.85
GW10	0.88	1.24	0.44	0.00
GW11	0.83	0.80	0.11	0.61
GW12	2.06	2.20	0.11	1.83
GW13	1.84	2.01	0.15	1.53
GW14	1.97	1.95	0.08	1.82
GW15	2.05	2.06	0.06	1.94
GW2	2.09	2.16	0.11	1.87
GW3	1.77	1.76	0.11	1.54
GW4	1.77	1.92	0.19	1.39
GW5	1.86	1.89	0.05	1.76
GW6	1.81	1.81	0.04	1.72
GW7	1.80	1.88	0.06	1.67
GW8	1.57	1.54	0.08	1.41
GW9	1.70	1.71	0.10	1.50
MM1	1.86	1.88	0.06	1.74
MM2	1.50	1.45	0.09	1.32
MM3	1.56	1.58	0.09	1.38
MM4	1.77	1.68	0.08	1.62
MM5	1.77	1.79	0.05	1.66
MM6	1.73	1.71	0.07	1.60
MM7	1.65	1.71	0.07	1.51
MM8	1.53	1.55	0.05	1.43
MM9	1.10	1.10	0.23	0.65
MV1	1.80	1.81	0.05	1.71
MV10	1.52	1.60	0.11	1.30
MV11	1.98	2.01	0.07	1.84
MV12	1.89	1.90	0.05	1.79
MV13	1.94	1.90	0.04	1.87
MV14	1.64	1.64	0.06	1.52
MV15	1.80	1.83	0.05	1.70
MV16	1.66	1.66	0.09	1.48
MV17	1.33	1.34	0.06	1.21
MV18	2.00	2.09	0.07	1.86
MV19	0.98	0.88	0.18	0.62
MV2	1.06	1.03	0.12	0.81
MV20	1.89	1.93	0.04	1.81
MV3	1.45	1.52	0.07	1.30
MV4	2.08	2.12	0.04	2.01

MV5	1.76	1.74	0.05	1.66
MV6	1.73	1.69	0.04	1.65
MV7	1.85	1.87	0.07	1.71
MV8	1.64	1.65	0.05	1.55
MV9	1.47	1.52	0.05	1.36
RS10	2.27	2.21	0.06	2.16
RS11	2.05	2.10	0.15	1.75
RS12	1.83	1.96	0.16	1.51
RS13	1.66	1.74	0.11	1.43
RS14	1.66	1.63	0.13	1.39
RS15	2.03	2.02	0.08	1.87
RS16C	1.83	1.78	0.05	1.72
RS17C	1.95	1.97	0.06	1.83
RS18C	2.09	2.16	0.08	1.94
RS1C1	1.69	1.71	0.06	1.56
RS1C2	1.67	1.65	0.07	1.53
RS1LE	1.61	1.64	0.05	1.51
RS1UE	1.41	1.34	0.06	1.28
RS2C	1.86	1.87	0.08	1.71
RS2LE	1.83	1.96	0.08	1.67
RS2UE	1.95	1.97	0.05	1.85
RS3C	1.62	1.60	0.04	1.53
RS3LE	1.60	1.59	0.05	1.50
RS3UE	1.60	1.63	0.07	1.47
RS4C	1.98	1.95	0.05	1.88
RS4LE	1.86	1.83	0.04	1.78
RS4UE	2.07	2.06	0.05	1.97
RS5C	1.92	1.91	0.07	1.78
RS5LE	2.31	2.36	0.07	2.16
RS5UE	2.12	2.09	0.05	2.01
RS5UE_02	1.74	1.65	0.18	1.38
RS6C	1.97	1.97	0.06	1.85
RS6LE	1.91	1.89	0.06	1.78
RS6UE	2.26	2.20	0.06	2.14
RS7C	1.77	1.85	0.07	1.64
RS8C	1.67	1.74	0.10	1.47
RS9	2.15	2.13	0.06	2.03
VC02	0.93	1.21	0.25	0.44
VC04	1.23	1.25	0.16	0.91

Appendix B: Table 3 – Shannon-Wiener Diversity Index - Grasses

Site	Mean	Median	SE	(Min)Acceptable
BBM1	1.32	1.27	0.06	1.20
BBM2	1.34	1.38	0.07	1.19
BBM3	1.04	1.15	0.09	0.86
BBT1	0.27	0.00	0.14	-0.01
BBT2	0.50	0.64	0.21	0.08
BBT3	0.56	0.64	0.13	0.29
BBU1	0.27	0.00	0.16	-0.06
BBU2	0.34	0.00	0.17	0.01
BBU3	0.10	0.00	0.10	-0.10
GW1	1.17	1.25	0.10	0.97
GW10	1.19	1.08	0.13	0.93
GW11	1.19	1.24	0.09	1.01
GW12	1.34	1.38	0.05	1.25
GW13	1.61	1.60	0.04	1.53
GW14	1.20	1.08	0.12	0.96
GW15	1.88	1.80	0.07	1.73
GW2	1.87	1.87	0.03	1.81
GW3	1.64	1.57	0.06	1.52
GW4	1.38	1.40	0.10	1.19
GW5	1.67	1.71	0.04	1.59
GW6	1.72	1.69	0.07	1.57
GW7	1.91	1.94	0.07	1.76
GW8	1.84	1.84	0.03	1.77
GW9	1.90	1.90	0.06	1.79
MM1	1.80	1.83	0.03	1.73
MM2	1.90	1.97	0.06	1.79
MM3	1.85	1.92	0.05	1.75
MM4	1.70	1.72	0.05	1.59
MM5	1.80	1.85	0.07	1.67
MM6	1.76	1.77	0.04	1.68
MM7	1.59	1.66	0.07	1.46
MM8	1.87	1.86	0.04	1.80
MM9	1.14	1.09	0.11	0.91
MV1	1.18	1.28	0.08	1.02
MV10	2.18	2.19	0.05	2.09
MV11	2.15	2.22	0.05	2.06
MV12	1.79	1.85	0.05	1.69
MV13	1.83	1.86	0.04	1.75
MV14	2.03	2.04	0.03	1.97
MV15	1.89	1.88	0.02	1.84
MV16	0.92	1.07	0.11	0.70
MV17	1.94	1.92	0.04	1.85
MV18	1.97	1.97	0.05	1.87
MV19	1.00	1.26	0.18	0.64
MV2	1.97	2.01	0.04	1.89

MV20	1.79	1.75	0.03	1.73
MV3	2.00	2.06	0.07	1.86
MV4	2.17	2.21	0.04	2.10
MV5	1.81	1.84	0.05	1.71
MV6	1.88	1.88	0.04	1.80
MV7	1.60	1.60	0.07	1.46
MV8	1.48	1.54	0.06	1.35
MV9	1.93	1.98	0.04	1.85
RS10	2.12	2.16	0.08	1.96
RS11	2.29	2.28	0.08	2.14
RS12	1.68	1.68	0.03	1.62
RS13	1.73	1.69	0.11	1.50
RS14	2.16	2.15	0.06	2.04
RS15	1.80	1.84	0.06	1.68
RS16C	2.13	2.09	0.04	2.05
RS17C	2.29	2.34	0.05	2.19
RS18C	2.41	2.48	0.07	2.28
RS1C1	1.94	1.95	0.03	1.87
RS1C2	1.93	1.97	0.04	1.84
RS1LE	1.71	1.74	0.04	1.63
RS1UE	1.60	1.59	0.05	1.50
RS2C	2.15	2.10	0.06	2.03
RS2LE	2.10	2.09	0.05	2.00
RS2UE	2.34	2.34	0.04	2.27
RS3C	2.02	2.07	0.04	1.95
RS3LE	1.94	1.97	0.04	1.86
RS3UE	2.16	2.21	0.04	2.08
RS4C	1.96	1.94	0.04	1.88
RS4LE	1.95	1.85	0.05	1.84
RS4UE	2.17	2.13	0.05	2.06
RS5C	2.39	2.38	0.05	2.29
RS5LE	2.08	2.05	0.04	2.00
RS5UE	2.10	2.10	0.04	2.02
RS5UE_02	1.91	1.92	0.06	1.78
RS6C	1.93	1.98	0.07	1.79
RS6LE	1.44	1.42	0.06	1.33
RS6UE	1.86	1.71	0.09	1.67
RS7C	1.93	1.95	0.05	1.82
RS8C	1.96	2.01	0.04	1.87
RS9	1.95	1.98	0.04	1.88
VC02	1.15	1.07	0.20	0.75
VC04	0.31	0.27	0.13	0.06

Appendix B: Table 4 – Ground Surface Cover – Bare Ground

Site	Mean %	Median %	SE	(Max)Acceptable %
BBM1	11.11	8	3	17
BBM2	10.78	11	2	15
BBM3	5.89	6	2	10
BBT1	3.78	2	1	6
BBT2	4	3	1	6
BBT3	0.78	0	0	1
BBU1	1.11	1	0	2
BBU2	1.33	2	0	2
BBU3	1.33	0	1	3
GW1	0.5	0	0	1
GW10	0	0	0	0
GW11	6.67	6	1	9
GW12	0.83	0.5	0	2
GW13	1.27	1	0	2
GW14	1.67	2	0	2
GW15	2.56	2	1	4
GW2	2.83	3	1	4
GW3	1.17	0	0	2
GW4	0.33	0	0	1
GW5	0.4	0	0	1
GW6	3.6	4	1	5
GW7	2.53	2	1	4
GW8	1.86	2	0	3
GW9	4.78	4	1	6
MM1	3.73	3	1	5
MM2	1.71	1	0	2
MM3	3.61	3	1	5
MM4	0.11	0	0	0
MM5	3.67	3	1	5
MM6	2.38	2	1	4
MM7	1.33	1	0	2
MM8	2.52	2	1	4
MM9	4	3.5	1	5
MV1	0.2	0	0	0
MV10	6.5	4	1	9
MV11	2.67	3	1	4
MV12	3.56	3.5	1	5
MV13	3.67	2	1	5
MV14	2.33	1.5	1	4
MV15	1.17	1	1	2
MV16	5.89	6	2	9
MV17	4.33	3	1	6
MV18	2.42	1.5	1	4
MV19	17	11	5	28
MV2	3.39	3.5	1	5

MV20	2.25	2	1	3
MV3	2.4	2	1	4
MV4	3.78	3.5	1	6
MV5	3.07	2	1	5
MV6	8.94	7.5	2	12
MV7	1.92	2	0	3
MV8	4	3	1	5
MV9	6.38	5	1	9
RS10	1.67	1	1	3
RS11	1	1	0	2
RS12	0.33	0	0	1
RS13	7.33	6	3	14
RS14	11	8	4	18
RS15	1.5	2	1	3
RS16C	2.2	2	1	3
RS17C	1.07	1	0	2
RS18C	1.13	1	0	2
RS1C1	2.61	2	0	4
RS1C2	1.39	1	0	2
RS1LE	1.67	1	0	2
RS1UE	1.67	1	0	3
RS2C	1.78	2	0	2
RS2LE	1.5	1	0	2
RS2UE	2	1	1	3
RS3C	1.17	1	0	2
RS3LE	1.44	1	0	2
RS3UE	1.89	1	0	3
RS4C	3.94	4	1	5
RS4LE	4.06	4	1	6
RS4UE	3.11	2.5	1	5
RS5C	4	2	1	6
RS5LE	2.61	2	1	4
RS5UE	2.47	2	1	4
RS5UE_02	2.33	2	1	4
RS6C	2.61	1.5	1	4
RS6LE	2.94	2	1	4
RS6UE	5.2	6	1	7
RS7C	2.94	3	1	4
RS8C	1	1	0	2
RS9	9.33	9	1	12
VC02	3	2	1	5
VC04	3.33	3	1	5

Appendix B: Table 5 – Ground Surface Cover - Litter

Site	% Mean	% Median	SE	(Min)Acceptable %[1]
BBM1	23.44	31	4.986	13.468
BBM2	12.11	11	4.4	3.358
BBM3	20.44	17	6.3	7.756
BBT1	0.67	0	0.3	0.092
BBT2	2.33	0	1.1	0.07
BBT3	0.89	0	0.4	0.112
BBU1	1.11	1	0.5	0.032
BBU2	1.89	0	1.0	-0.122
BBU3	1.44	1	0.6	0.28
GW1	83.11	84.5	2.0	79.126
GW10	70.67	71	1.5	67.764
GW11	51	50	1.0	49
GW12	79.5	83	5.9	67.626
GW13	86.4	90	2.4	81.544
GW14	73.83	74	3.2	67.454
GW15	80.56	83	3.3	73.9
GW2	80.42	83.5	2.4	75.65
GW3	84.58	82.5	2.5	79.544
GW4	83.17	81.5	2.2	78.806
GW5	89.53	91	1.1	87.306
GW6	79.2	79	2.5	74.118
GW7	76	76	2.1	71.846
GW8	72.38	72	1.9	68.54
GW9	71.67	71	4.9	61.822
MM1	80.67	83	2.5	75.578
MM2	78.76	84	3.2	72.314
MM3	77.94	80.5	3.4	71.086
MM4	87.5	91.5	2.7	82.078
MM5	78.07	80	3.5	71.004
MM6	87.95	91	2.0	83.91
MM7	85.5	87.5	2.4	80.72
MM8	83.33	89	3.2	76.942
MM9	69.83	69.5	4.2	61.448
MV1	89	88	1.9	85.196
MV10	69.33	72	3.6	62.2
MV11	78.93	78	2.2	74.486
MV12	69.78	70.5	3.3	63.228
MV13	72.8	79	4.7	63.306
MV14	85.92	85	1.3	83.264
MV15	80.67	84	3.3	74.008
MV16	66.44	68	5.5	55.454
MV17	70.89	72.5	4.8	61.284
MV18	81	79.5	2.4	76.194

[1] a decrease of cover by litter is acceptable is correlated to an increase in cover by plants

MV19	55.89	51	9.6	36.63
MV2	65.5	67.5	4.3	56.926
MV20	81	80	2.3	76.316
MV3	81	82	2.3	76.304
MV4	73.78	75	2.6	68.582
MV5	74.47	76	2.9	68.624
MV6	48.44	48	3.9	40.548
MV7	80.83	84	3.9	73.03
MV8	70.65	74	4.6	61.358
MV9	63.86	67	3.1	57.672
RS10	88.33	90	2.4	83.44
RS11	86.67	88	2.2	82.328
RS12	85	87	4.7	75.548
RS13	64.67	64	7.9	48.848
RS14	60.67	65	10.4	39.842
RS15	81	81	3.9	73.254
RS16C	77.33	78	2.3	72.83
RS17C	83.33	84	1.2	80.982
RS18C	84.87	86	1.7	81.45
RS1C1	65.39	70	3.0	59.294
RS1C2	69.83	70	3.4	62.966
RS1LE	77.83	79.5	2.8	72.236
RS1UE	78.33	77.5	2.0	74.412
RS2C	81.17	84	2.4	76.362
RS2LE	86.11	87.5	2.3	81.416
RS2UE	82.94	87	3.1	76.762
RS3C	88.17	89.5	2.1	83.978
RS3LE	89.39	91.5	1.3	86.748
RS3UE	88.56	91	1.8	84.88
RS4C	77.5	81	2.1	73.31
RS4LE	73.44	77.5	3.3	66.882
RS4UE	68.06	67.5	3.7	60.686
RS5C	74	76	3.0	68.01
RS5LE	80.28	83	2.1	76.09
RS5UE	80	89	4.3	71.452
RS5UE_02	72.67	70	5.9	60.82
RS6C	81.56	83	1.7	78.246
RS6LE	80.5	80.5	1.3	77.842
RS6UE	80	87	3.5	72.974
RS7C	79.11	80.5	2.2	74.726
RS8C	77.28	83	3.6	70.152
RS9	73	71	4.8	63.492
VC02	85.33	89	4.9	75.496
VC04	84.67	85	2.0	80.714

Appendix B: Table 6 – Ground Surface Cover – Grass/Forbs

Site	Mean%	Median%	SE	(Min)Acceptable %
BBM1	22.1	20.0	2.8	16.5
BBM2	29.8	34.0	4.7	20.3
BBM3	48.6	44.0	6.9	34.8
BBT1	2.4	2.0	0.6	1.2
BBT2	3.0	1.0	1.1	0.7
BBT3	3.1	3.0	0.7	1.6
BBU1	1.1	1.0	0.4	0.3
BBU2	1.8	1.0	0.5	0.7
BBU3	1.0	1.0	0.5	-0.1
GW1	103.4	101.5	4.2	95.0
GW10	37.7	39.0	8.7	20.3
GW11	37.0	35.0	5.3	26.4
GW12	89.7	89.5	7.3	75.2
GW13	95.2	99.0	7.3	80.6
GW14	74.3	66.0	10.5	53.3
GW15	114.6	114.0	9.2	96.2
GW2	95.5	92.5	7.0	81.4
GW3	103.7	99.0	8.2	87.2
GW4	76.0	78.0	9.6	56.7
GW5	107.3	106.0	4.5	98.3
GW6	124.5	126.0	7.7	109.2
GW7	103.7	105.0	4.8	94.1
GW8	86.2	85.0	4.9	76.4
GW9	130.9	117.0	21.9	87.2
MM1	139.0	126.0	10.7	117.7
MM2	145.5	142.0	10.5	124.5
MM3	142.8	141.0	10.7	121.4
MM4	207.9	202.5	8.9	190.2
MM5	159.9	150.0	9.8	140.3
MM6	167.7	175.0	9.9	147.8
MM7	160.2	164.0	11.1	138.0
MM8	156.0	139.0	11.7	132.7
MM9	91.2	93.5	5.3	80.5
MV1	143.9	141.0	5.0	134.0
MV10	132.1	137.0	9.4	113.2
MV11	152.9	155.0	5.0	143.0
MV12	118.4	109.5	9.8	98.9
MV13	116.6	121.0	8.8	99.0
MV14	145.8	126.5	13.0	119.8
MV15	145.8	152.5	7.0	131.7
MV16	68.6	61.0	5.3	58.0
MV17	127.2	124.0	11.0	105.2
MV18	127.9	118.0	8.0	112.0
MV19	43.3	45.0	4.8	33.8

MV2	136.6	136.5	10.4	115.8
MV20	139.5	136.0	7.6	124.4
MV3	164.5	165.0	6.5	151.5
MV4	120.9	123.0	6.3	108.3
MV5	130.9	129.0	7.3	116.3
MV6	82.7	79.5	3.9	74.9
MV7	127.2	125.0	6.5	114.1
MV8	117.6	115.0	5.1	107.4
MV9	103.3	103.0	7.7	87.8
RS10	156.7	165.0	9.0	138.6
RS11	180.3	190.0	15.9	148.5
RS12	180.3	196.0	29.3	121.8
RS13	133.7	120.0	13.3	107.1
RS14	128.7	131.0	18.6	91.5
RS15	84.0	82.0	6.3	71.4
RS16C	155.7	158.0	9.2	137.4
RS17C	186.3	186.0	7.4	171.5
RS18C	171.1	163.0	9.1	153.0
RS1C1	144.5	148.0	6.7	131.2
RS1C2	139.2	136.5	9.1	121.0
RS1LE	154.0	142.5	6.6	140.7
RS1UE	131.7	133.5	4.6	122.4
RS2C	167.4	167.0	8.3	150.7
RS2LE	175.4	170.5	7.7	159.9
RS2UE	155.0	157.5	7.4	140.2
RS3C	181.9	176.0	9.4	163.1
RS3LE	194.1	196.5	8.3	177.4
RS3UE	185.3	184.0	9.5	166.2
RS4C	139.5	138.5	6.1	127.3
RS4LE	128.3	133.5	6.1	116.1
RS4UE	122.3	128.0	7.2	108.0
RS5C	122.4	115.5	8.4	105.6
RS5LE	152.9	156.5	9.7	133.5
RS5UE	155.6	155.0	9.1	137.4
RS5UE_02	116.7	109.0	10.3	96.1
RS6C	138.3	131.0	6.8	124.6
RS6LE	133.9	140.0	6.0	121.8
RS6UE	133.3	140.0	7.9	117.5
RS7C	138.5	129.5	7.5	123.6
RS8C	177.4	173.5	6.8	163.8
RS9	130.3	131.0	10.4	109.6
VC02	122.7	112.0	14.1	94.4
VC04	79.3	80.0	3.1	73.2

Appendix B: Table 7 – Ground Surface Cover – Native Grass

Site	Mean %	Median %	SE	(Min)Acceptable %
BBM1	17.6	19.0	2.4	12.8
BBM2	24.7	24.0	4.8	15.0
BBM3	46.3	42.0	6.2	34.0
BBT1	2.4	2.0	0.6	1.2
BBT2	3.0	1.0	1.1	0.7
BBT3	3.1	3.0	0.7	1.6
BBU1	1.1	1.0	0.4	0.3
BBU2	1.8	1.0	0.5	0.7
BBU3	1.0	1.0	0.5	-0.1
GW1	38.9	37.5	4.0	30.9
GW10	35.7	38.0	9.0	17.6
GW11	15.3	14.0	3.0	9.4
GW12	39.2	40.5	5.0	29.2
GW13	71.3	78.0	7.2	57.0
GW14	26.0	18.5	7.7	10.7
GW15	74.2	66.0	8.4	57.4
GW2	58.6	57.0	4.0	50.5
GW3	65.8	63.0	5.6	54.7
GW4	65.5	71.5	6.7	52.1
GW5	82.2	84.0	3.5	75.1
GW6	76.9	80.0	7.6	61.8
GW7	76.5	76.0	4.7	67.1
GW8	72.5	73.0	4.0	64.5
GW9	93.4	92.0	14.7	64.0
MM1	91.4	88.0	8.4	74.6
MM2	95.6	97.0	7.6	80.4
MM3	118.2	123.5	9.0	100.1
MM4	134.4	141.0	9.4	115.7
MM5	128.3	113.0	9.6	109.2
MM6	93.4	95.0	5.3	82.9
MM7	111.2	105.5	8.6	94.0
MM8	75.2	72.0	5.6	64.0
MM9	86.2	85.5	6.5	73.2
MV1	123.3	115.0	4.6	114.1
MV10	121.3	126.0	9.0	103.3
MV11	140.1	142.0	5.2	129.7
MV12	95.7	85.0	7.6	80.4
MV13	101.5	102.0	8.4	84.7
MV14	101.3	99.5	9.0	83.2
MV15	99.4	99.0	4.6	90.3
MV16	8.9	10.0	2.2	4.5
MV17	85.2	82.5	7.8	69.6
MV18	113.8	107.0	7.9	98.1
MV19	42.0	45.0	4.6	32.8

MV2	116.9	113.0	9.6	97.6
MV20	106.8	107.5	6.7	93.4
MV3	137.2	137.0	8.5	120.1
MV4	109.7	111.0	5.7	98.4
MV5	121.7	115.0	7.4	106.8
MV6	80.7	77.5	3.9	72.9
MV7	125.8	124.0	6.5	112.7
MV8	111.5	108.0	4.6	102.3
MV9	98.1	97.0	7.3	83.5
RS10	124.3	128.0	6.6	111.1
RS11	139.7	138.0	11.6	116.5
RS12	120.3	126.0	21.5	77.4
RS13	76.3	71.0	10.6	55.2
RS14	86.3	79.0	13.6	59.1
RS15	44.5	49.0	6.3	31.9
RS16C	119.1	118.0	8.1	102.8
RS17C	147.2	153.0	6.3	134.6
RS18C	129.3	128.0	8.3	112.7
RS1C1	71.9	72.5	4.1	63.8
RS1C2	75.7	82.0	5.7	64.3
RS1LE	70.3	70.5	4.2	62.0
RS1UE	56.8	59.0	3.0	50.7
RS2C	105.4	105.5	6.7	92.0
RS2LE	110.9	114.0	4.8	101.3
RS2UE	113.4	119.0	4.9	103.5
RS3C	93.4	87.0	6.1	81.1
RS3LE	87.6	95.5	5.5	76.6
RS3UE	93.9	88.5	6.0	81.9
RS4C	87.9	92.0	5.0	77.9
RS4LE	77.4	78.0	3.9	69.6
RS4UE	79.7	76.0	5.1	69.6
RS5C	106.4	102.0	7.0	92.5
RS5LE	106.8	112.0	6.5	93.8
RS5UE	90.7	90.0	6.2	78.3
RS5UE_02	88.7	88.0	4.1	80.6
RS6C	84.9	80.0	4.6	75.8
RS6LE	59.2	58.5	4.0	51.2
RS6UE	71.5	80.0	4.7	62.1
RS7C	90.2	91.5	5.6	78.9
RS8C	108.7	109.5	5.8	97.2
RS9	94.0	95.0	6.2	81.6
VC02	51.0	37.0	15.1	20.8
VC04	4.3	1.0	2.5	0.0