

Trend Study 9-14-00

Study site name: Red Pine Canyon.

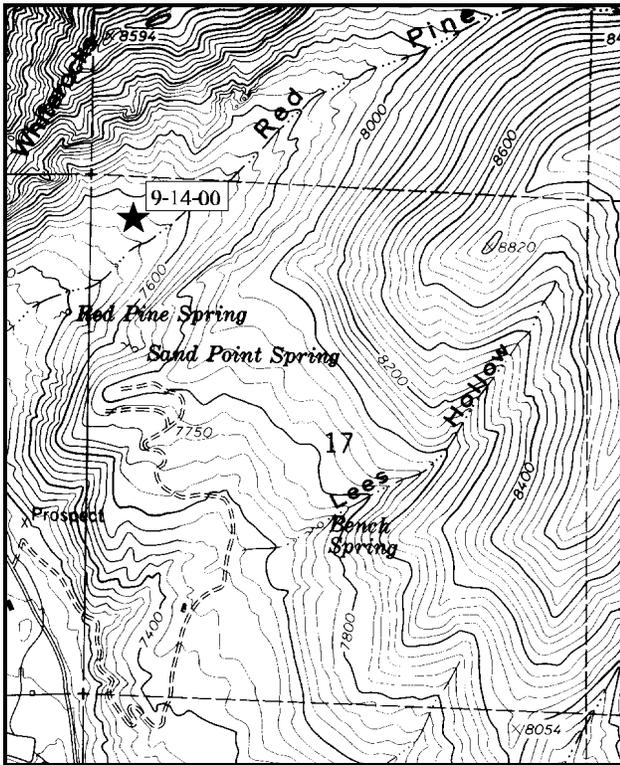
Range type: Mixed Mountain Brush.

Compass bearing: frequency baseline 340°M.

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (10 & 25ft), line 2 (70ft), line 3 (41ft), line 4 (98ft).

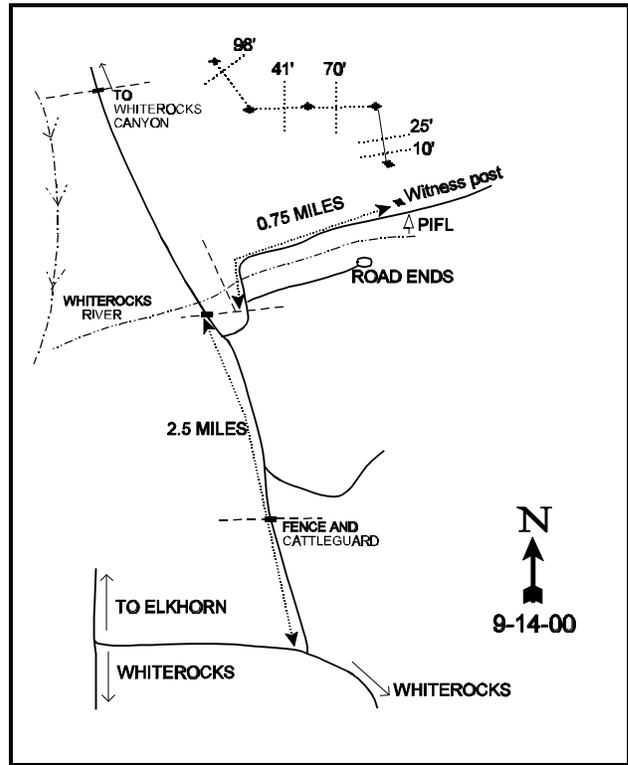
LOCATION DESCRIPTION

From the town of Whiterocks, go east 1.75 miles to a "T" intersection. Turn left and proceed north approximately 4.5 miles to the point where the road makes a sharp bend to the west. Just after the bend, turn north onto the Whiterocks Canyon Road. Proceed approximately 2.6 miles to a dirt road to the east. Turn right, before the cattle guard. Follow the road along the fence, cross the creek then bear right and go up the canyon about 0.75 miles to a witness post on the left side of the road. A lone limber pine is near the witness post on the right side of the road. From the witness post, the 0-foot baseline stake is located 6 paces away at a bearing of 300°M. The 0-foot stake is marked with a browse tag #9038. The frequency baseline stakes are marked by green fenceposts 12-18 inches in height.



Map Name: Ice Cave Peak

Township 2N Range 1W, Section 17



Diagrammatic Sketch

UTM 4492156.525 N, 591955.356 E

## DISCUSSION

### Trend Study No. 9-14 (12-3)

The Red Pine Canyon study is located in the Whiterocks River drainage on the north side of Red Pine Canyon. The area is within the Ashley National Forest and is considered critical winter range for deer and elk in most years. The study site is on a southerly exposure with a 10% to 12% slope at an elevation of 7,300 feet. Pellet group transect data taken along the baseline in 2000 estimate 33 deer days use/acre (81 ddu/ha), 2 elk days use/acre (5 edu/ha), and 1 cow day use/acre (3 cdu/ha). Rabbit pellets were the most abundant category in the pellet transect. Two deer were observed on the site when it was read in 2000. Thermal and escape cover are abundant with tall trees and shrubs in all directions.

Soils on the site are alluvially derived and not well consolidated in recognizable horizons. Soil texture is a sandy loam and moderately deep with an estimated effective rooting depth of nearly 14 inches. Large boulders and cobbles are present on the surface and throughout the profile. The soil appears highly erodible but currently is in good condition due primarily to abundance of vegetation and litter. Bare ground is low at 5%, with most occurring in open spaces underneath the shrub canopy. A few inactive gullies are present on the site with estimated depths of about 6 feet.

Shrubs dominate the site providing 74% of the vegetation cover. Key browse species include mountain big sagebrush and antelope bitterbrush, with lesser numbers of serviceberry and true mountain mahogany. Mountain big sagebrush averages around 20% cover in 1995 and 2000. It provides nearly half the shrub cover at the site. Density was estimated at 3,199 plants/acre for mountain big sagebrush in 1982, increasing to 4,332 by 1988. With the much larger sample used in 1995, density was estimated at 2,640 plants/acre in 1995 and 2,360 in 2000. The larger sample better estimates shrub densities that are characteristically clumped and/or have discontinuous distributions. Young plants comprised over 30% of the population in 1982 and 1988, but were apparently overestimated with the small sample used in those earlier years. Recruitment is currently ('00) low at 1%. Utilization has generally been light with percent decadency ranging between 8% in 1982 to 19% in 2000. This level is not unreasonable for sagebrush. The proportion of the plants classified with poor vigor is estimated at 8% in both 1995 and 2000. This is an overly mature, dense population that would improve with thinning.

Antelope bitterbrush has an estimated cover of 14% and density of 2,400 plants/acre in 2000. Percent decadency is currently ('00) low at 8% with almost all individuals showing good vigor. Use has steadily decreased on bitterbrush with each reading. Currently ('00), only 14% display heavy use. This level of utilization is relatively low for bitterbrush and is mostly likely due to the abundance of bitterbrush over the site as well as current light use by big game. Although bitterbrush was noted as producing abundant seed in 2000, few seedlings or young were encountered in 1995 or 2000.

True mountain mahogany and serviceberry occur at much lower densities. Currently ('00), they have densities estimated at 380 and 120 plants/acre respectively. Poor vigor has been high on serviceberry the past two readings at 78% ('95) and 50% ('00). Use is moderate on serviceberry and mostly light on mahogany. With only light to moderate use on bitterbrush, mahogany and serviceberry, this site apparently has not been used by very large numbers of big game over the past several winters.

Grasses are only moderately abundant for a mountain brush site and appear to be suppressed by the abundant shrub cover. Perennial grasses sampled include: thickspike wheatgrass, mutton bluegrass, Kentucky bluegrass and needle-and-thread. Perennial grasses combine to provide just 8% average cover in 2000. Sum of nested frequency of perennial grasses did slightly increase in 2000, but still not back up to the level they were in 1988. Cheatgrass is the most abundant grass, but it significantly decreased in nested frequency in 2000 due to drought.

It still provides nearly 7% average cover and will likely increase with normal precipitation patterns in the future. Forbs are very diverse but not very common. On average, they only contribute 2% average cover in 1995 and 2000. The most common useful forbs are silvery lupine and low penstemon. Sum of nested frequency of perennial forbs decreased by nearly half in 2000 with drought. Forbs will likely never be a significant component at this site due to the dominance of the shrub cover.

#### 1982 APPARENT TREND ASSESSMENT

Soil trend appears stable but somewhat unstable. The potential for erosion is high with an herbaceous understory that is not very abundant. However, the abundance of shrub cover helps limit erosion. Vegetative trend also appears stable but could decline if significantly heavier animal use were to be applied. The browse component is healthy with a possibly expanding mountain big sagebrush population. Antelope bitterbrush appears more static, but with adequate vegetative reproduction occurring. Grasses and forbs provide a moderate amount of forage and valuable ground cover, which is essential on this site.

#### 1988 TREND ASSESSMENT

Soil trend is stable with no significant changes in ground cover percentages. The gully through the site is well vegetated and erosion is limited by abundant vegetation and litter cover. The browse trend is stable for the key species, mountain big sagebrush and antelope bitterbrush. Bitterbrush displays more heavy use and increased decadency, but the number of mature plants/acre is similar to that of 1982 and recruitment appears better with an estimated 200 seedlings/acre and 266 young plants/acre. Trend for the herbaceous understory is slightly improved. Quadrat frequency of grasses increased while frequency of forbs remained the same.

##### TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - slightly improving (4)

#### 1995 TREND ASSESSMENT

Soil trend remains stable with adequate ground cover from vegetation and litter. The browse trend is stable for mountain big sagebrush and bitterbrush. Density of sagebrush declined overall, but the population of mature plants remains similar. The greatly increased sample size used this year accounts for most of the difference in density between years. Bitterbrush decadence declined from 21% to 3% since 1988, while the proportion of heavily utilized plants also declined. Trend for the herbaceous understory is down likely due to the effects of drought and the dominance of the site by shrubs. Sum of nested frequency of perennial grasses declined by 44% with the frequency of forbs also declining moderately. Cheatgrass is currently the dominate grass on the site.

##### TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - down with a high amount of cheatgrass in the understory (1)

2000 TREND ASSESSMENT

Trend for soil is slightly up. Vegetation and litter cover are abundant and well disbursed. The ratio of protective ground cover (vegetation, litter, and cryptogams) to bare soil increased from an already high value of 8.3:1 to 10.5:1. Trend for browse is stable. Mountain big sagebrush has a stable, but overly mature population, with percent decadence slightly increasing. Use is mostly light and vigor generally good. Bitterbrush slightly increased in density, but also shows slight increases in those classified with poor vigor and decadency. However, poor vigor and percent decadency are currently low even with these slight increases. Use remains mostly moderate with heavy use at a moderately low 14%. Recruitment is low for both sagebrush and bitterbrush. The shrub component appears to be suppressing the understory and a thinning treatment should be considered. Trend for the herbaceous understory is stable overall. Sum of nested frequency slightly increased for perennial grasses, but decreased for perennial forbs due to drought. Cheatgrass nested frequency significantly decreased due to drought as well, however, it still remains the dominate understory species.

TREND ASSESSMENT

soil - slightly up (4)

browse - stable (3) and needs to be thinned

herbaceous understory - stable overall; slightly up for grasses, down for forbs (3)

HERBACEOUS TRENDS --

Herd unit 09 , Study no: 14

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	<sub>b</sub> 169	<sub>a</sub> 89	<sub>a</sub> 87	43	72	43	38	.80	1.19
G	Bouteloua gracilis	7	14	2	7	3	4	2	.36	.03
G	Bromus tectorum (a)	-	<sub>b</sub> 208	<sub>a</sub> 158	-	-	60	53	8.42	6.80
G	Carex spp.	<sub>a</sub> -	<sub>b</sub> 18	<sub>a</sub> 7	1	-	9	2	.41	.30
G	Poa fendleriana	<sub>a</sub> 38	<sub>a</sub> 24	<sub>b</sub> 97	5	18	10	35	.56	2.86
G	Poa pratensis	38	76	76	1	17	25	24	1.77	2.94
G	Poa secunda	<sub>b</sub> 80	<sub>a</sub> -	<sub>a</sub> -	35	36	-	-	-	-
G	Sitanion hystrix	-	3	-	-	-	1	-	.00	-
G	Sporobolus cryptandrus	<sub>b</sub> 11	<sub>a</sub> -	<sub>a</sub> -	3	4	-	-	-	-
G	Stipa comata	<sub>b</sub> 105	<sub>a</sub> 27	<sub>a</sub> 38	40	51	14	16	.51	.68
Total for Annual Grasses		0	208	158	0	0	60	53	8.42	6.80
Total for Perennial Grasses		448	251	307	135	201	106	117	4.43	8.02
Total for Grasses		448	459	465	135	201	166	170	12.85	14.82
F	Antennaria rosea	3	3	3	1	1	1	1	.15	.15
F	Arabis spp.	15	9	4	4	6	5	3	.02	.04
F	Artemisia ludoviciana	6	6	4	4	4	2	2	.01	.03
F	Castilleja chromosa	-	3	-	-	-	1	-	.00	-
F	Chenopodium leptophyllum (a)	6	15	15	-	3	6	6	.03	.33
F	Comandra pallida	<sub>b</sub> 8	<sub>a</sub> -	<sub>ab</sub> 4	-	3	-	2	-	.01

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	<i>Collinsia parviflora</i> (a)	-	<sub>b</sub> 21	<sub>a</sub> -	-	-	9	-	.07	-
F	<i>Crepis acuminata</i>	-	-	1	-	-	-	1	-	.00
F	<i>Cryptantha</i> spp.	<sub>b</sub> 4	<sub>b</sub> 16	<sub>a</sub> -	11	3	8	-	.09	-
F	<i>Cymopterus</i> spp.	2	3	-	-	1	1	-	.03	-
F	<i>Descurainia pinnata</i> (a)	-	3	3	-	-	1	1	.00	.00
F	<i>Eriogonum racemosum</i>	12	13	6	13	6	6	5	.13	.07
F	<i>Eriogonum umbellatum</i>	<sub>b</sub> 5	<sub>a</sub> -	<sub>a</sub> -	5	3	-	-	-	-
F	<i>Ipomopsis aggregata</i>	-	3	-	-	-	1	-	.15	-
F	<i>Lappula occidentalis</i> (a)	-	<sub>b</sub> 4	<sub>a</sub> -	-	-	3	-	.01	-
F	<i>Lactuca serriola</i>	-	-	2	-	-	-	1	-	.03
F	<i>Lepidium densiflorum</i> (a)	-	4	-	-	-	2	-	.01	-
F	<i>Lupinus argenteus</i>	10	10	6	7	6	5	3	1.02	.33
F	<i>Microsteris gracilis</i> (a)	-	1	-	-	-	1	-	.00	-
F	<i>Mirabilis linearis</i> var. <i>linearis</i>	<sub>b</sub> 13	<sub>a</sub> -	<sub>a</sub> -	-	7	-	-	-	-
F	<i>Oenothera pallida</i>	<sub>b</sub> 42	<sub>a</sub> 15	<sub>a</sub> 12	-	21	6	7	.05	.11
F	<i>Penstemon humilis</i>	<sub>a</sub> -	<sub>b</sub> 15	<sub>b</sub> 6	-	-	6	3	.37	.04
F	<i>Penstemon</i> spp.	<sub>b</sub> 22	<sub>ab</sub> 9	<sub>a</sub> 2	13	11	4	1	.21	.03
F	<i>Phlox longifolia</i>	3	-	2	-	1	-	1	-	.00
F	<i>Polygonum douglasii</i> (a)	-	3	1	-	-	2	1	.01	.00
F	<i>Schoenocrambe linifolia</i>	<sub>a</sub> -	<sub>b</sub> 8	<sub>a</sub> 1	-	-	4	1	.04	.00
F	<i>Senecio integerrimus</i>	<sub>a</sub> -	<sub>b</sub> 7	<sub>b</sub> 8	3	-	3	3	.06	.12
F	<i>Senecio multilobatus</i>	-	3	4	17	-	1	2	.00	.01
F	<i>Sisymbrium altissimum</i> (a)	-	-	2	-	-	-	1	-	.15
F	<i>Tragopogon dubius</i>	-	1	-	-	-	1	-	.00	-
F	Unknown forb-perennial	4	-	-	-	1	-	-	-	-
Total for Annual Forbs		6	51	21	0	3	24	9	0.15	0.48
Total for Perennial Forbs		149	124	65	78	74	55	36	2.37	0.99
Total for Forbs		155	175	86	78	77	79	45	2.52	1.48

Values with different subscript letters are significantly different at  $\alpha = 0.10$

BROWSE TRENDS --  
Herd unit 09 , Study no: 14

T y p e	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Amelanchier alnifolia	6	3	.36	.03
B	Artemisia tridentata vaseyana	78	66	21.55	19.42
B	Cercocarpus montanus	11	14	1.89	1.24
B	Chrysothamnus viscidiflorus lanceolatus	11	8	.53	.06
B	Eriogonum heracleoides	6	3	.09	.36
B	Mahonia repens	11	11	.60	.24
B	Opuntia spp.	17	17	.43	.49
B	Pediocactus simpsonii	1	3	-	.03
B	Pinus edulis	-	-	.63	.85
B	Purshia tridentata	59	77	9.26	14.32
B	Sambucus cerulea	4	3	.68	.56
B	Symphoricarpos oreophilus	32	38	5.85	8.13
Total for Browse		236	243	41.90	45.75

CANOPY COVER --  
Herd unit 09 , Study no: 14

Species	Percent Cover	
	'95	'00
Pinus edulis	-	1

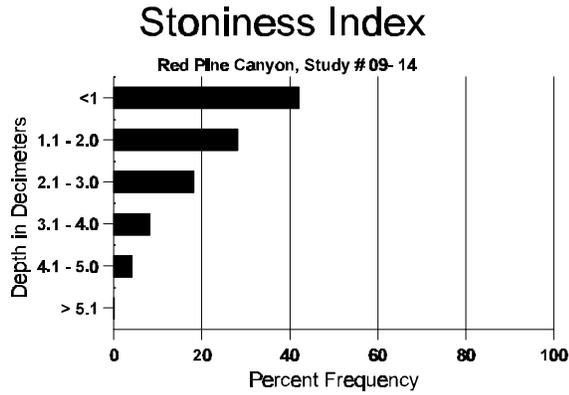
BASIC COVER --  
Herd unit 09 , Study no: 14

Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	350	333	9.00	6.25	47.95	60.52
Rock	192	143	5.25	9.25	13.94	11.85
Pavement	12	4	0	.25	.03	.03
Litter	392	385	75.25	74.50	59.10	69.05
Cryptogams	27	16	4.00	1.50	.64	.89
Bare Ground	93	70	9.00	8.25	4.92	5.51

SOIL ANALYSIS DATA --

Herd Unit 09, Study # 14, Study Name: Red Pine Canyon

Effective rooting depth (inches)	Temp °F (depth)	pH	% sand	% silt	% clay	%OM	PPM P	PPM K	dS/m
13.81	54.0 (15.91)	6.7	74.9	13.8	11.3	3.2	15.7	80.0	0.6



PELLET GROUP FREQUENCY --

Herd unit 09 , Study no: 14

Type	Quadrat Frequency	
	'95	'00
Rabbit	22	11
Elk	2	1
Deer	20	12
Cattle	1	2
Moose	-	-

Pellet Transect	
Pellet Groups per Acre	Days Use per Acre (ha)
'00	'00
705	N/A
26	2 (5)
426	33 (81)
17	2 (5)
9	1 (2)

BROWSE CHARACTERISTICS --

Herd unit 09 , Study no: 14

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Amelanchier alnifolia																		
Y	'82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	'95	2	-	-	1	-	-	-	-	-	-	-	3	-	60			3
	'00	-	-	-	-	-	-	2	-	-	2	-	-	-	40			2
M	'82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'95	3	-	1	2	-	-	-	-	-	1	1	4	-	120	32	32	6
	'00	-	4	-	-	-	-	-	-	-	1	-	3	-	80	42	46	4
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			11%			78%			-33%							
'00		67%			00%			50%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	180		-			
												'00	120		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Artemisia tridentata vaseyana																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	95	8	-	-	-	-	-	-	-	-	8	-	-	-	160		8	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	18	-	-	-	-	-	-	-	-	18	-	-	-	1200		18	
	88	17	1	1	2	-	-	-	-	-	21	-	-	-	1400		21	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	82	23	-	-	3	-	-	-	-	-	25	1	-	-	1733	27 32	26	
	88	32	2	-	-	-	-	-	-	-	31	3	-	-	2266	31 32	34	
	95	93	23	-	-	-	-	-	-	-	116	-	-	-	2320	36 48	116	
	00	80	6	-	8	-	-	-	-	-	94	-	-	-	1880	41 42	94	
D	82	3	1	-	-	-	-	-	-	-	2	-	1	1	266		4	
	88	9	1	-	-	-	-	-	-	-	8	-	2	-	666		10	
	95	10	5	-	-	-	-	-	-	-	5	-	-	10	300		15	
	00	17	4	-	2	-	-	-	-	-	14	-	-	9	460		23	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	320		16	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	420		21	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>							
'82		02%			00%			04%			+26%							
'88		06%			02%			03%			-39%							
'95		21%			00%			08%			-11%							
'00		08%			00%			08%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	3199	Dec:	8%			
												'88	4332		15%			
												'95	2640		11%			
												'00	2360		19%			

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total								
		1	2	3	4		1	2									
<b>Cercocarpus montanus</b>																	
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	1	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	1	-	-	-	-	-	-	1	-	-	-	66		1	
	95	-	2	-	-	-	-	-	-	2	-	-	-	40		2	
	00	4	-	-	-	-	-	-	-	4	-	-	-	80		4	
M	82	1	1	1	-	-	-	-	-	3	-	-	-	200	35	31	3
	88	-	1	1	-	-	-	-	-	2	-	-	-	133	47	39	2
	95	5	4	1	-	-	-	-	-	10	-	-	-	200	36	39	10
	00	13	-	1	-	1	-	-	-	15	-	-	-	300	48	46	15
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	1	1	-	-	-	-	-	2	-	-	-	40		2	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>									
'82		33%		33%		00%		- 1%									
'88		67%		33%		00%		+29%									
'95		50%		14%		00%		+26%									
'00		05%		05%		00%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	200	Dec:	0%				
										'88	199		0%				
										'95	280		14%				
										'00	380		0%				
<b>Chrysothamnus viscidiflorus lanceolatus</b>																	
M	82	2	-	-	-	-	-	-	-	2	-	-	-	133	14	17	2
	88	-	-	-	1	-	-	-	-	1	-	-	-	66	20	7	1
	95	9	-	-	2	-	-	-	-	11	-	-	-	220	21	25	11
	00	4	-	1	4	-	-	-	-	9	-	-	-	180	19	17	9
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	1	1	-	-	-	-	-	-	1	-	1	-	133		2	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>		<u>Heavy Use</u>		<u>Poor Vigor</u>		<u>%Change</u>									
'82		00%		00%		00%		+33%									
'88		33%		00%		33%		+10%									
'95		00%		00%		00%		-18%									
'00		00%		11%		00%											
Total Plants/Acre (excluding Dead & Seedlings)										'82	133	Dec:	0%				
										'88	199		67%				
										'95	220		0%				
										'00	180		0%				

A Y G R E	Form Class (No. of Plants)	Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total				
		1	2	3	4		1	2					
Eriogonum heracleoides													
M	'82	-	-	-	-	-	-	-	0	-	-	0	
	'88	-	-	-	-	-	-	-	0	-	-	0	
	'95	6	-	-	3	-	-	-	180	11	10	9	
	'00	1	-	-	4	-	-	-	100	3	10	5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>		<u>% Change</u>			
	'82	00%			00%			00%					
	'88	00%			00%			00%					
	'95	00%			00%			00%		-44%			
	'00	00%			00%			00%					
Total Plants/Acre (excluding Dead & Seedlings)										'82	0	Dec:	-
										'88	0		-
										'95	180		-
										'00	100		-
Mahonia repens													
Y	'82	100	-	-	-	-	-	-	100	-	-	100	
	'88	145	56	-	-	-	-	-	201	-	-	201	
	'95	7	-	-	-	-	-	-	7	-	-	7	
	'00	-	-	-	-	-	-	-	0	-	-	0	
M	'82	212	-	-	-	-	-	-	212	-	-	212	
	'88	54	149	-	-	-	124	-	320	7	-	327	
	'95	42	-	-	11	-	-	-	53	-	-	53	
	'00	43	-	-	6	-	-	-	49	-	-	49	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>		<u>% Change</u>			
	'82	00%			00%			00%		+41%			
	'88	39%			00%			00%		-97%			
	'95	00%			00%			00%		-18%			
	'00	00%			00%			00%					
Total Plants/Acre (excluding Dead & Seedlings)										'82	20799	Dec:	-
										'88	35200		-
										'95	1200		-
										'00	980		-

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Opuntia spp.																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	00	1	-	-	4	-	-	-	-	-	5	-	-	-	100			5
M	82	8	-	-	-	-	-	-	-	-	8	-	-	-	533	2	5	8
	88	6	-	-	1	-	-	-	-	-	7	-	-	-	466	4	7	7
	95	26	-	-	2	-	-	-	-	-	28	-	-	-	560	4	17	28
	00	23	-	-	-	-	-	2	-	-	25	-	-	-	500	4	13	25
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+33%							
'88		00%			00%			00%			-25%							
'95		00%			00%			00%			+ 0%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	533	Dec:	-			
												'88	799		-			
												'95	600		-			
												'00	600		-			
Pediocactus simpsonii																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20	5	6	1
	00	2	-	-	1	-	-	-	-	-	3	-	-	-	60	2	2	3
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			+67%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	20		-			
												'00	60		-			

A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
<b>Purshia tridentata</b>																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	2	-	-	-	-	-	1	-	-	3	-	-	-	200		3	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	82	1	-	-	-	-	-	-	-	-	1	-	-	-	66		1	
	88	-	1	-	3	-	-	-	-	-	4	-	-	-	266		4	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	3	-	-	-	-	-	-	-	-	2	-	1	-	60		3	
M	82	6	12	2	1	-	-	-	-	-	17	1	3	-	1400	31	38	21
	88	1	6	8	-	-	-	-	-	-	14	-	1	-	1000	29	35	15
	95	49	18	6	11	6	-	-	-	-	90	-	-	-	1800	25	44	90
	00	45	27	17	13	1	-	5	-	-	104	-	4	-	2160	29	45	108
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	4	1	-	-	-	-	-	-	5	-	-	-	333		5	
	95	1	-	-	1	1	-	-	-	-	-	-	-	3	60		3	
	00	4	3	-	2	-	-	-	-	-	7	-	-	2	180		9	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	100		5	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>							
'82		55%			09%			14%			+ 8%							
'88		46%			38%			04%			+14%							
'95		27%			06%			03%			+23%							
'00		26%			14%			06%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	1466	Dec:	0%			
												'88	1599		21%			
												'95	1860		3%			
												'00	2400		8%			
<b>Sambucus cerulea</b>																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	5	-	-	-	-	-	2	-	-	7	-	-	-	140	48	46	7
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80	66	28	4
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			-29%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	140		-			
												'00	100		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	5	-	-	1	-	-	-	-	-	6	-	-	-	400		6	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	8	1	2	-	-	-	-	-	-	10	-	1	-	733		11	
	95	12	-	-	-	-	-	-	-	-	12	-	-	-	240		12	
	00	4	-	-	1	-	-	-	-	-	5	-	-	-	100		5	
M	82	3	3	-	-	-	-	-	-	-	6	-	-	-	400	14	23	6
	88	3	-	1	-	-	-	-	-	-	4	-	-	-	266	15	19	4
	95	53	1	-	15	-	-	-	-	-	69	-	-	-	1380	27	57	69
	00	57	-	-	9	-	-	5	-	-	68	-	3	-	1420	24	48	71
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>							
'82		50%			00%			00%			+60%							
'88		07%			20%			07%			+38%							
'95		01%			00%			00%			- 6%							
'00		00%			00%			04%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	400	Dec:	-			
												'88	999		-			
												'95	1620		-			
												'00	1520		-			