

Trend Study 10-11-00

Study site name: Park Ridge .

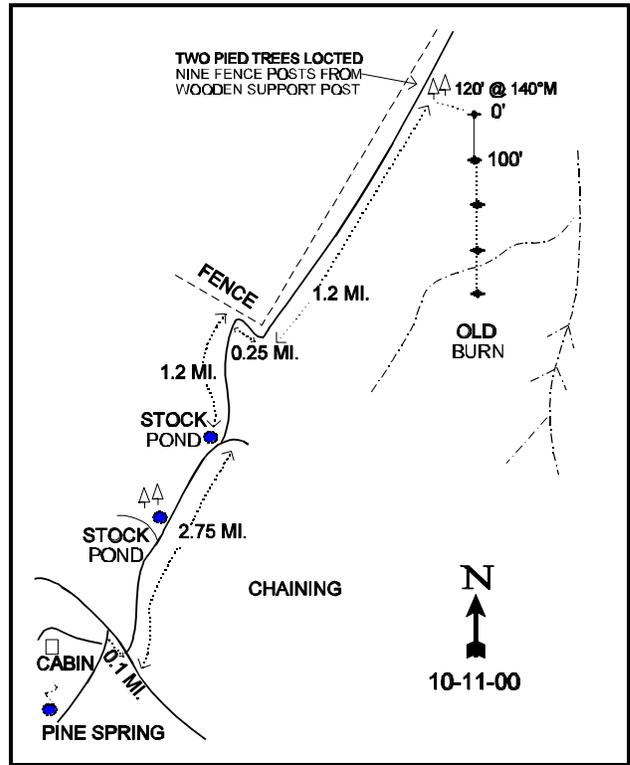
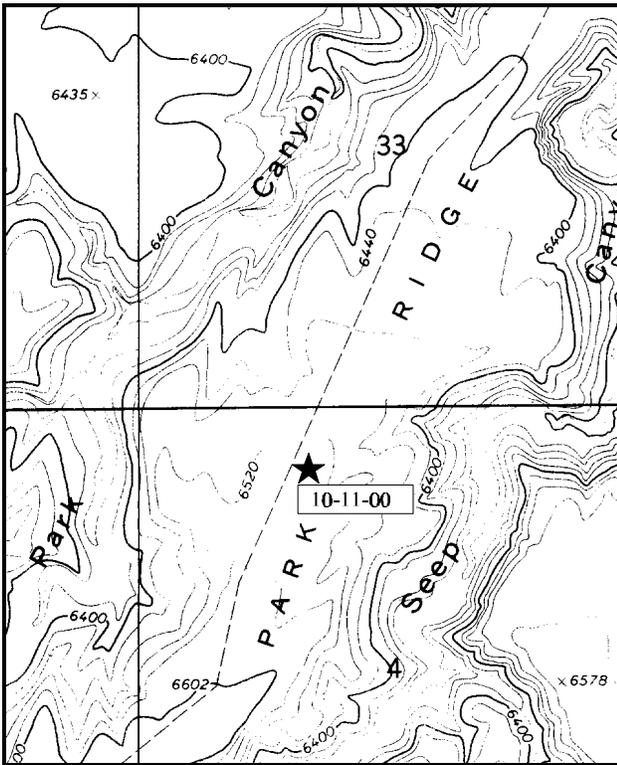
Range type: Fourwing Saltbush .

Compass bearing: frequency baseline 156°M.

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From the Seep Ridge Road, 0.1 miles south of the Pine Spring turnoff, turn left onto a jeep trail. Go down this road 2.7 miles to a bend to the right by a stock pond. Continue straight past the stockpond on a faint road, and 1.2 miles down the ridge to a fence. Bear right and follow the road along the fence. Turn left through the gate and continue down the fence 1.2 miles. Stop by a small, isolated group of pinyon pine trees on the right side of the road. From here, walk SE into the flat approximately 120 feet at 140°M to the 0-foot baseline stake. The study is marked by short, green fenceposts.



Map Name: Cooper Canyon

Diagrammatic Sketch

Township 14S, Range 23E, Section 4

UTM. 4388221.704 N, 641557.198 E

DISCUSSION

Trend Study No. 10-11 (16A-11)

The Park Ridge trend study is located on what is thought to be critical mule deer winter range. The prevalent vegetation on the flats is fourwing saltbush and winterfat, with an increasing population of Wyoming big sagebrush. These flats are surrounded by mature pinyon-juniper woodland. When this site was established in 1988, little sign of deer was found in the large open parks, so the study was placed more closely to the edge where there was evidence of deer use. Elk pellet groups were also rare but were occurred more than deer. Pellet group transect data from 2000 estimate light use by wildlife with 6 deer days use/acre (15 ddu/ha) and 3 elk days use/acre (7 edu/ha). All cow pats sampled in 2000 were from the previous fall with use being estimated at 19 cow days use/acre (47 cdu/ha). Cattle graze this BLM land on a 3-year rest-rotation system during the spring or fall.

The terrain on top of the ridge is essentially flat, but it does gradually slope to the northeast. Slope at the study site is less than 1% with an elevation of 6,540 feet. A fire burned a portion of the site between 1988 and 1995. When the baseline was lengthened in 1995, part of belt 3 and all of belt 4 were within the burned area.

Soils on the site have a loam texture and are slightly alkaline (pH of 7.7). Effective rooting depth is estimated at just over 12 inches with average soil temperature being 63°F at 12 inches. A light-colored hardpan exists in the profile at approximately 10-12 inches. A profile stoniness index estimated from penetrometer readings shows this hardpan as the majority of readings are between 10 and 12 inches. Phosphorus (5.9 ppm) is lower than the 10 ppm thought necessary for normal plant growth and development. Organic matter is very low at only 0.1%. The risk of erosion is slight with the gentle slope, yet light to moderate soil pedestaling was noted around shrubs in 2000, especially the older fourwing plants. There was no sign of soil moisture down to about 14 inches. Bare ground cover increased in 2000, while protective ground cover from vegetation, litter, and cryptogams decreased.

The key browse species on the site consist of fourwing saltbush and winterfat, with an increasing population of Wyoming big sagebrush. The top end of the area where the last two belts are placed was burned leaving very little sagebrush in the burned portion. Winterfat is the most abundant preferred shrub with an estimated density of 17,000 plants/acre in 1988, declining to 8,440 plants/acre in 1995, and 6,600 plants/acre in 2000. The change in density between 1988 and 1995 is more related to the larger sample size used in 1995 and 2000. Twenty-seven percent of the winterfat sampled in 1988 were classified as heavily hedged. Use in 1995 was much lighter with only 1% heavily hedged, increasing to 34% in 2000. However, with minimal annual growth in 2000 due to drought it was difficult to determine use, thus utilization on winterfat could be overestimated. Percent decadency slightly increased from 3% in 1995 to 10% in 2000 as did the proportion of the population in poor vigor (2% to 7%). Recruitment from young plants is currently estimated at 1,120 plants/acre (17% of the population).

Fourwing saltbush was the dominant overstory shrub in 1988, but Wyoming big sagebrush is now more abundant. Density plot estimates from 1988 indicated 267 mature fourwing plants/acre with a canopy cover estimated at 5%. During the 1995 reading, fourwing numbered 380 plants/acre, decreasing to 320 plants/acre in 2000. Percent decadency has steadily increased over all sampling years and is currently ('00) very high at 69%. The proportion of the population in poor vigor has also increased. Although the mature plants produce a large quantity of seed, no seedling or young plants were found in 1988 or 1995. In 2000, seedlings are estimated at 40 per acre with young being approximately 20 plants/acre. Leader growth averaged about 6 inches in 2000.

With the lengthened baseline used in 1995, a number of Wyoming big sagebrush were picked up in the sample. There was an estimated 1,120 plants/acre in 1995, increasing to 1,740 plants/acre in 2000. Reproductive

potential (# of seedlings) and recruitment from young plants were extremely high in 1995 at 63% and 57% respectively. Both of these parameters decreased in 2000 (2% seedlings and 26% young). Utilization of the sagebrush was light in both 1988 and 1995 with a few preferred individuals displaying heavier use. Use increased in 2000 with 41% displaying moderate use and an additional 22% showing heavy use. Most of this use was in a concentrated area near the beginning of the transect where sagebrush was not burned. Vigor is good and decadency low at 6%. Leader growth on Wyoming big sagebrush is fair in 2000, averaging nearly 5 inches.

Other browse species include fringed sagebrush and broom snakeweed. Fringed sagebrush is currently ('00) estimated at 2,080 plants/acre with a high proportion of seedlings (52%) and moderate recruitment from young plants (19%). Fringed sagebrush is more common in the burned section of the site than outside of the burn. Broom snakeweed was present in the past, but in a fairly low density. However in 2000, this species rapidly increased in density to 20,100 plants/acre. Most of the broom snakeweed plants occur within the burned area. This population appears to be stable as 87% of the population is made up of mature plants. Snakeweed only contributed 9% of the browse cover in 1995, but currently provides 66% of the browse cover. The preferred species, winterfat, fourwing saltbush, and Wyoming big sagebrush contributed 77% of the browse cover in 1995, but only 29% in 2000 due to the very rapid increase in broom snakeweed.

Grasses provided 61% of the vegetative cover in 1995, decreasing to 38% in 2000. Forbs provided 18% of the vegetative cover in 1995, decreasing to 7% in 2000. These decreases in cover from herbaceous species is due to the decrease in annuals due to drought. Cheatgrass illustrates this well with this species decreasing from almost 13% average cover in 1995 to 3% in 2000. Cheatgrass is still abundant at this site as it has a quadrat frequency of 87% in 2000. Dominant perennial grasses include: thickspike wheatgrass, needle-and-thread, bottlebrush squirreltail, and blue grama. As a group, perennial grasses slightly increased in sum of nested frequency in 2000. Forbs decreased in 2000 with the loss of annuals due to drought. Scarlet globemallow is by far the most numerous forb, providing 80% of the total forb cover in 1995, and 88% in 2000. Annuals forbs decreased in sum of nested frequency from 178 in 1995 to 5 in 2000. Perennial forbs decreased somewhat.

1988 APPARENT TREND ASSESSMENT

Due to the rocky nature of the soil, there was a fairly high amount of pavement cover (13%). Overall, vegetative and litter cover is good, totaling 57%. Percent bare ground occupied almost 23% of the surface. Soil trend appears stable due to the vegetative and litter cover combined with the gentle terrain. The populations of the key species, fourwing saltbush and winterfat, appear stable. Lack of recruitment for fourwing is a concern, but plants are currently large and vigorous. Winterfat is abundant with abundant young plants, low decadency and good vigor. Without considering annuals, the herbaceous understory is not particularly abundant. The two most abundant grasses, thickspike wheatgrass and squirreltail, have quadrat frequencies of 46% and 50% respectively. Only five perennial forb species were encountered.

1995 TREND ASSESSMENT

Soil trend appears stable. Percent bare ground is similar to that of 1988. Litter declined with the extended drought, but erosion is not a problem due to the gentle terrain. Trend for browse is mixed. Fourwing has become increasingly decadent (0 to 47%) with no recruitment to replace decadent shrubs. This pattern was also noted on the previous site. The trend is most likely weather related with the combination of extended severe drought and the severe winter of 1992-93. In addition, height/crown measurements of mature shrubs are nearly twice as small as those observed in 1988. Another problem this species has is that it is a rather short-lived species, and under ideal conditions, it will only live about 20 to 30 years. Winterfat density has declined, but almost all of the difference would be due to the larger sample taken this year as there were no indications of heavy use and/or increased decadency to explain this large decline. Percent decadency is lower and moderate to

heavy use has decreased from 82% to 7% with no dead plants observed in 1995. Wyoming big sagebrush appears to have an increasing population with a majority of the population consisting of seedlings and young. Weighing all these factors, overall trend for browse is considered stable until more data on the trend of fourwing saltbush is available in the year 2000. The herbaceous understory is in poor condition and dominated by annuals, almost 50% of the herbaceous cover. Of the five perennial grasses observed in 1988, only one, needle-and-thread, increased in nested frequency. Sum of nested frequency of perennial forbs increased slightly, but scarlet globemallow is the only abundant perennial forb. Cheatgrass accounts for 55% of the grass cover, while annual forbs make up 11% of the forb cover. Trend for the herbaceous understory is considered slightly down.

TREND ASSESSMENT

soil - stable (3)

browse - stable overall, down for fourwing which makes up only 14% of the total browse cover (3)

herbaceous understory - slightly down and in poor condition with excessive numbers of annuals (2)

2000 TREND ASSESSMENT

Trend for soil is slightly down due to an increase in average cover of bare ground, with also decreases in protective cover from vegetation, litter, and cryptogams. Soil loss and pedestaling were noted as being light to moderate even with the gentle slope. Trend for browse is slightly down overall. Fourwing saltbush had increases in percent decadency (47% in '95 to 69% in '00) and poor vigor (11% in '95 to 19% in '00). Recruitment remains low at 6%. Winterfat is abundant, generally in good health but slightly increasing in percent decadency and poor vigor in 2000. Heavy use increased from 1% in 1995 to 34% in 2000. Young recruitment is moderate at 17%. Wyoming big sagebrush increased in density, but use increased. In 1995, use was light except for 2% of the population which displayed heavy use. In 2000, moderate use was sampled on 41% of the population and heavy use on 22% of the population. However, due to minimal annual growth on shrubs due to drought, utilization was difficult to determine and the increased use on winterfat and sagebrush may be overestimated. Recruitment in the sagebrush population remains good at 26%. A major negative factor at this site is the very rapid increase of broom snakeweed in 2000. This species currently is estimated at over 20,000 plants/acre while providing two-thirds of the browse cover. Trend for the herbaceous understory is stable. Annual grasses and forbs were greatly reduced in 2000 due to drought, with perennial grasses increasing slightly and perennial forbs slightly decreasing in sum of nested frequency.

TREND ASSESSMENT

soil - slightly down (2)

browse - slightly down (2)

herbaceous understory - stable (3)

HERBACEOUS TRENDS --

Herd unit 10 , Study no: 11

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'88	'95	'00	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	_b 144	_{ab} 98	_a 90	46	34	33	2.90	.82
G	Bouteloua gracilis	76	65	75	31	29	30	2.98	2.44
G	Bromus tectorum (a)	-	_b 307	_a 240	-	92	87	12.47	2.92
G	Oryzopsis hymenoides	_b 68	_b 58	_a 6	33	25	3	.52	.02
G	Poa fendleriana	-	6	4	-	2	2	.06	.01
G	Poa secunda	_a -	_a 6	_b 20	-	2	7	.30	.25
G	Sitanion hystrix	_b 107	_a 49	_a 75	50	23	30	.77	.69
G	Stipa comata	_a 62	_a 84	_b 124	27	34	49	2.67	2.39
Total for Annual Grasses		0	307	240	0	92	87	12.47	2.92
Total for Perennial Grasses		457	366	394	187	149	154	10.21	6.64
Total for Grasses		457	673	634	187	241	241	22.68	9.57
F	Astragalus spp.	_b 9	_a -	_a -	4	-	-	-	-
F	Calochortus nuttallii	-	3	-	-	1	-	.00	-
F	Cryptantha spp.	_a -	_b 14	_a -	-	6	-	.03	-
F	Descurainia pinnata (a)	-	_b 24	_a -	-	15	-	.17	-
F	Draba rectifruca (a)	_a 17	_b 67	_a 3	7	28	2	.14	.01
F	Erigeron pumilus	_c 63	_b 38	_a 12	32	19	7	.36	.09
F	Fritillaria pudica	_a -	_b 10	_a -	-	5	-	.05	-
F	Gilia pinnatifida (a)	_a 1	_b 34	_a -	1	19	-	.09	-
F	Lappula occidentalis (a)	-	_b 33	_a 2	-	16	1	.37	.00
F	Phlox longifolia	-	1	-	-	1	-	.00	-
F	Sphaeralcea coccinea	_a 144	_b 213	_a 168	59	78	68	5.44	1.54
F	Tragopogon dubius	_b 22	_a 12	_b 39	14	4	18	.02	.11
F	Unknown forb-annual (a)	-	_b 20	_a -	-	8	-	.06	-
Total for Annual Forbs		18	178	5	8	86	3	0.84	0.01
Total for Perennial Forbs		238	291	219	109	114	93	5.92	1.75
Total for Forbs		256	469	224	117	200	96	6.76	1.76

Values with different subscript letters are significantly different at % = 0.10 (annuals excluded)

BROWSE TRENDS --
Herd unit 10 , Study no: 11

Type	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Artemisia frigida	59	45	.89	.65
B	Artemisia tridentata wyomingensis	21	28	.66	2.02
B	Atriplex canescens	15	13	1.11	1.20
B	Ceratoides lanata	90	80	4.20	.91
B	Gutierrezia sarothrae	32	88	.70	9.23
B	Opuntia spp.	8	5	.16	-
Total for Browse		225	259	7.73	14.02

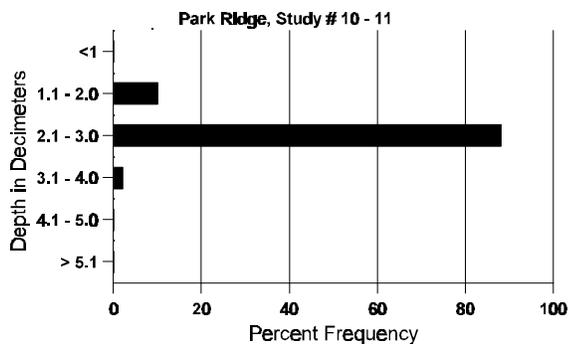
BASIC COVER --
Herd unit 10 , Study no: 11

Cover Type	Nested Frequency		Average Cover %		
	'95	'00	'88	'95	'00
Vegetation	363	326	8.50	41.96	34.06
Rock	216	79	2.25	1.23	.45
Pavement	321	306	12.75	4.54	5.51
Litter	385	351	48.75	35.29	26.56
Cryptogams	220	173	5.25	6.42	3.01
Bare Ground	336	344	22.50	25.77	39.20

SOIL ANALYSIS DATA --
Herd Unit 10, Study # 11, Study Name: Park Ridge

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
12.33	63.2 (12.20)	7.7	38.0	36.4	25.6	0.1	5.9	339.2	.6

Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 10 , Study no: 11

Type	Quadrat Frequency		Pellet Transect	
			Pellet Groups per Acre	Days Use per Acre (ha)
	'95	'00	00	00
Rabbit	4	6	183	N/A
Elk	5	6	35	3 (7)
Deer	3	5	78	6 (15)
Cattle	2	7	226	19 (47)

BROWSE CHARACTERISTICS --

Herd unit 10 , Study no: 11

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht. Cr.		
Artemisia frigida																		
S	88	38	-	-	1	-	-	-	-	-	39	-	-	-	2600			39
	95	47	-	-	-	-	-	-	-	-	47	-	-	-	940			47
	00	54	-	-	-	-	-	-	-	-	54	-	-	-	1080			54
Y	88	24	1	-	1	-	-	-	-	-	26	-	-	-	1733			26
	95	21	-	-	3	-	-	-	-	-	24	-	-	-	480			24
	00	20	-	-	-	-	-	-	-	-	20	-	-	-	400			20
M	88	13	1	-	1	-	-	-	-	-	15	-	-	-	1000	7	5	15
	95	146	-	-	-	-	-	-	-	-	146	-	-	-	2920	13	9	146
	00	51	-	-	13	-	-	-	-	-	63	-	1	-	1280	6	11	64
D	88	-	1	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	12	-	-	6	-	-	2	-	-	1	-	-	19	400			20
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'88		07%			00%			00%			+18%							
'95		00%			00%			00%			-39%							
'00		00%			00%			19%										
Total Plants/Acre (excluding Dead & Seedlings)											'88	2799	Dec:	2%				
											'95	3400		0%				
											'00	2080		19%				

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				
<i>Artemisia tridentata wyomingensis</i>																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	30	-	-	5	-	-	-	-	-	35	-	-	-	700		35	
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	32	-	-	-	-	-	-	-	-	32	-	-	-	640		32	
	00	20	-	3	-	-	-	-	-	-	23	-	-	-	460		23	
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	95	23	-	1	-	-	-	-	-	-	24	-	-	-	480	20	36	
	00	11	18	6	-	15	9	-	-	-	59	-	-	-	1180	17	28	
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	3	-	1	-	1	-	-	-	4	-	-	1	100		5	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'88		00%			00%			00%										
'95		00%			02%			00%			+36%							
'00		41%			22%			01%										
Total Plants/Acre (excluding Dead & Seedlings)											'88	0	Dec:	0%				
											'95	1120		0%				
											'00	1740		6%				
<i>Atriplex canescens</i>																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
Y	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	88	3	1	-	-	-	-	-	-	-	4	-	-	-	266	40	44	
	95	6	4	-	-	-	-	-	-	-	10	-	-	-	200	22	25	
	00	2	-	1	1	-	-	-	-	-	4	-	-	-	80	24	32	
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	6	-	1	2	-	-	-	-	-	7	-	-	2	180		9	
	00	3	2	-	2	2	1	1	-	-	8	-	-	3	220		11	
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'88		25%			00%			00%			+30%							
'95		21%			05%			11%			-16%							
'00		25%			13%			19%										
Total Plants/Acre (excluding Dead & Seedlings)											'88	266	Dec:	0%				
											'95	380		47%				
											'00	320		69%				

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									
<i>Ceratoides lanata</i>																	
S	88	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	2	-	-	-	-	-	-	-	2	-	-	-	40		2	
	00	7	-	-	-	-	-	-	-	7	-	-	-	140		7	
Y	88	24	39	2	1	-	-	-	-	66	-	-	-	4400		66	
	95	19	-	-	-	-	-	-	-	19	-	-	-	380		19	
	00	53	3	-	-	-	-	-	-	56	-	-	-	1120		56	
M	88	15	96	62	2	1	-	1	-	177	-	-	-	11800	10	9	177
	95	369	17	4	2	-	-	-	-	392	-	-	-	7840	8	9	392
	00	71	53	105	8	5	-	-	-	242	-	-	-	4840	4	5	242
D	88	2	5	5	-	-	-	-	-	12	-	-	-	800		12	
	95	3	7	1	-	-	-	-	-	2	-	-	9	220		11	
	00	17	6	8	-	-	-	1	-	9	-	-	23	640		32	
X	88	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'88		55%			27%			00%			-50%						
'95		06%			01%			02%			-22%						
'00		20%			34%			07%									
Total Plants/Acre (excluding Dead & Seedlings)										'88	17000	Dec:	5%				
										'95	8440		3%				
										'00	6600		10%				
<i>Echinocereus spp.</i>																	
M	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	0	1	2	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'88		00%			00%			00%									
'95		00%			00%			00%									
'00		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)										'88	0	Dec:	-				
										'95	0		-				
										'00	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	5	6	7	8	9	1	2	3	4				
Gutierrezia sarothrae																	
S	88	104	-	-	-	-	-	-	-	-	104	-	-	-	6933		104
	95	147	-	-	1	-	-	-	-	-	148	-	-	-	2960		148
	00	31	-	-	-	-	-	-	-	-	31	-	-	-	620		31
Y	88	26	-	-	-	-	-	-	-	-	26	-	-	-	1733		26
	95	25	-	-	1	-	-	-	-	-	26	-	-	-	520		26
	00	80	-	-	-	-	-	-	-	-	80	-	-	-	1600		80
M	88	42	-	-	-	-	-	-	-	-	42	-	-	-	2800	6 6	42
	95	57	-	-	-	-	-	-	-	-	57	-	-	-	1140	7 7	57
	00	876	-	-	-	-	-	-	-	-	733	15	128	-	17520	5 8	876
D	88	-	-	1	-	-	-	-	-	-	1	-	-	-	66		1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	44	-	1	4	-	-	-	-	-	16	-	8	25	980		49
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	180		9
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>						
'88		00%			01%			00%			-64%						
'95		00%			00%			00%			+92%						
'00		00%			.09%			16%									
Total Plants/Acre (excluding Dead & Seedlings)												'88	4599	Dec:	1%		
												'95	1660		0%		
												'00	20100		5%		
Opuntia spp.																	
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
Y	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1
M	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	4 12	1
	95	7	-	-	-	-	-	-	-	-	7	-	-	-	140	2 9	7
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80	3 8	4
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
	95	2	-	-	-	-	-	-	-	-	-	-	-	2	40		2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>% Change</u>						
'88		00%			00%			00%			+67%						
'95		00%			00%			20%			-50%						
'00		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)												'88	66	Dec:	0%		
												'95	200		20%		
												'00	100		0%		