

Trend Study 14-4-99

Study site name: Camp Jackson Reservoir .

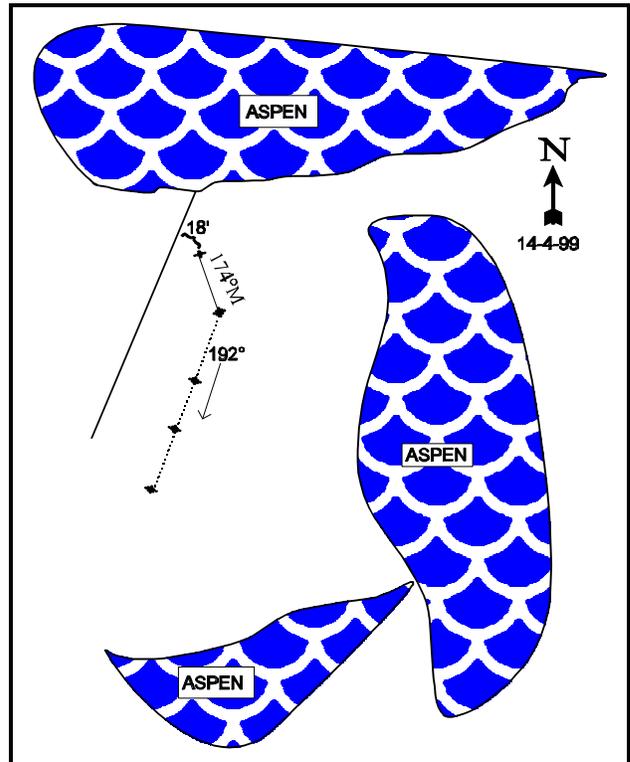
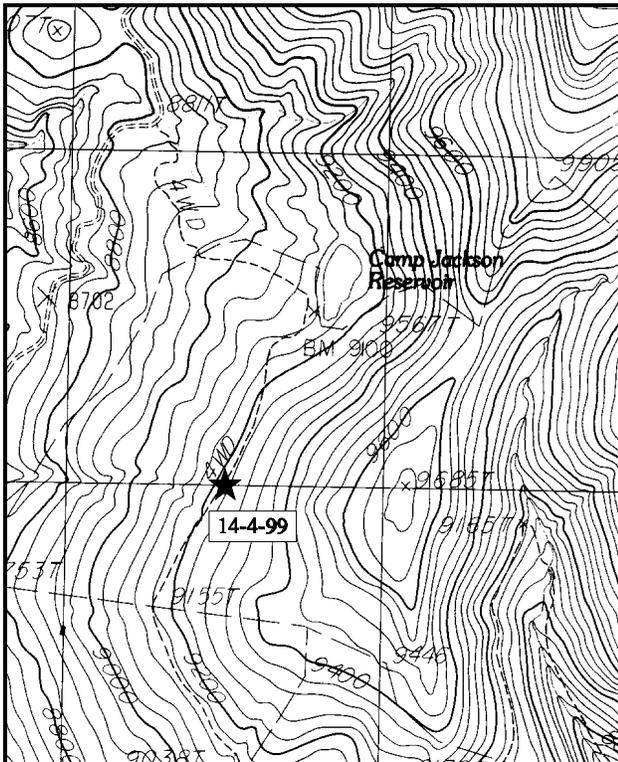
Range type: Gambel Oakbrush .

Compass bearing: frequency baseline 174°M.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

From Monticello, go west on the Blue Mountain Road to the North Creek Road just beyond Dalton Springs campground. Travel generally south or southwest on this road for 11.8 miles to the jeep trail leading to Camp Jackson Reservoir. At this point, it is 18 miles to both Monticello and Blanding. Turn east on this rough road, staying right until you come to a locked gate (contact Jerry Holiday in Monticello for combination). Go through the gate to a three-way fork below the south end of the reservoir. Take the right-most fork and go through the aspens for 0.35 miles. Continue out of the aspens into the oakbrush type for approximately 50 yards. The frequency baseline starting point is a red painted fence post (marker for the line intercept study) located 18 feet up on the east side of the road. It has a browse tag #7873 attached.



Map Name: Abajo Peak

Diagrammatic Sketch

Township 34S , Range 22E , Section 23

UTM 4185011.915 N, 633514.446 E

## DISCUSSION

### Trend Study No. 14-4 (35-4)

This trend study is located on the mountain side near Camp Jackson Reservoir which is dominated by open oakbrush and mature aspen stands. The two vegetation types provide a variety and abundance of succulent and browse forage, cover, and fawning areas important to summering deer and elk. The study samples an open hillside with mature aspen stands on three sides. Private land is nearby, but this study is located on Forest Service administered land. The area is managed as part of the Camp Jackson grazing allotment. The Johnson Creek unit is one of three on a rest rotation grazing system for 300 cattle (1,589 AUMs) during summer to early fall. Cattle were being moved through the area to lower grazing lands on the day of study establishment in August of 1986. Pellet group data from 1999 estimated only 1 deer days use/acre (3 deer days use/ha) and 2 elk days use/acre (5 elk days use/ha). Cow days use/acre were estimated at 44 (109 cow days use/ha). All pats appeared to be from last fall. An elk calf was found hiding by the 200 foot stake during the 1999 reading.

This oakbrush-aspen type is found on the west facing slope of the south-eastern most peak of the Abajo Mountains. From the study site, much of the mountain range is visible to the north and west across Johnson Creek. Elk Ridge is a prominent topographical feature to the south. The old original line intercept transect was located very near the new trend transect established in 1986. Elevation on this site is about 9,200 feet. Water is plentiful in the area with nearby perennial streams and Camp Jackson Reservoir. The area is important as a watershed and for recreation and hunting. It is also open to oil and gas mining claims and mineral exploration.

The soil is moderately deep with an estimated effective rooting depth of over 20 inches. Rock appears to be concentrated at about 20 inches in depth. Soil texture is a sandy clay loam with a moderately acid pH (5.7). Phosphorus may be limiting at just 5.7 ppm, when 10 ppm is thought to be minimal for normal plant growth and development. The area receives high precipitation typical of high mountain areas in the region, which can cause severe erosion if protective ground cover is lacking. On trails, bare areas, and road cuts, there are short deep gullies, sheet erosion, and concentrations of rock pavement on the soil surface. Overgrazing by domestic livestock, especially in the early part of this century, has led to severe soil loss and subsequent need for terracing and seeding on some of the higher portions of the Abajo range. Even with the abundance of herbaceous vegetation in addition to the oak clumps, there are still some areas of compacted and eroding exposed soil especially on the various wildlife and livestock trails. However, photo comparisons show the soil has stabilized considerably from the initial line-intercept transects of 1981.

Four to five foot tall oak dominates the area with abundant grasses and bare trails between the oak clumps. The clumps are thick with many young sprouts and stems. Density was estimated at 13,999 stems/acre in 1986. More than half (65%) of the population consisted of young stems. Most of the larger available oak showed moderate hedging, although some on the edges of the clones had been more heavily used because of their accessibility. The plants also suffered grasshopper/insect use resulting in leaf damage and reduction in vigor in 1986. Oak accounted for 60% of the total shrub cover in 1994, but it was mistakenly not counted in the shrub density strips. Density was estimated at 10,780 in 1999. Some of the change in density may be due to the much larger sample used after 1986. Use is currently light, vigor normal, and percent decadence low at 5%. Photo point comparisons and height measurements show that oak is becoming taller. Average cover of oak in 1999 remained similar to 1994 estimates, 20% and 19%. Overhead canopy cover of oak is currently estimated at 9%.

The only other abundant shrubs include Woods rose and snowberry. Snowberry made up 27% of the browse cover in 1994, increasing to 30% by 1999. Seventy percent of them showed moderate to heavy use and many displayed poor vigor for an unknown reason in 1986. Currently the snowberry population does not show these characteristics. The decline in density between 1986 and 1994 is mostly due to the much larger sample used in 1994 and 1999. Currently the population appears stable and only lightly utilized. Other browse

encountered include Woods rose and serviceberry. Both display only light use and good vigor. There are also some small aspens mixed in with the oak.

The herbaceous component is an important forage source on this site. A wide variety of grasses and forbs are present with many being important in soil binding and erosion control. Composition is diverse and different under the oak compared to the open areas. Kentucky bluegrass is the most abundant grass on the site. It dominates the composition under the oak and produced a total of 54% of the grass cover in 1999. Open areas are dominated more by mountain muhly, mutton bluegrass, and sedge. They currently ('99) account for 29% of the grass cover. Forb species encountered are abundant and too numerous to list, but include several desirable species which provide good spring forage. Utilization of forbs is generally light.

#### 1986 TREND ASSESSMENT

Comparison of the old line intercept data of 1981 and the new method of 1986 indicate a stable trend. There are slight differences in species composition and abundance, but overall the site appears to be in similar condition. There may be a trend towards increasing oak cover, but the oak does not appear to get very tall here and forage production remains largely available. Overall, the soil trend is also stable. Specifically referring to the line intercept study and line 1 of the 1986 study, there has been a definite increase in oak density and cover over the last 5 years and this trend should continue. Herbaceous plant cover also appears to be increasing and these indications point to an improving trend. This is especially true in regards to soil trend. Erosion was at one time a serious factor on this site, but increasing vegetative cover has stabilized the soil. The still well-defined erosion channels are showing signs of healing.

#### 1994 TREND ASSESSMENT

The trend for soil on this site should be considered stable with percent bare ground remaining about the same. Nearly half of the total vegetative cover is composed of herbaceous species which can better protect the soils from high intensity summer storms than the aerial cover of browse species. The browse trend is stable to slightly improving. Snowberry, a key browse species, shows signs of improved vigor. The sharp downward change in its density is more reflective of the much larger sample size taken in 1994 which gives a much better density estimate of this clumped species. The rhizomatous habit of the species can also cause difficulties in estimating its density. The other key browse species (Gambel oak) was mistakenly not inventoried in the browse strips. Point quarter data taken in 1994 estimates 884 stems/acre. The trend of the herbaceous understory is stable to slightly upward. The nested frequency values for grasses and forbs showed some improvement since 1986. Species diversity is very good with the number of species for the herbaceous understory approaching 50.

#### TREND ASSESSMENT

soil - stable

browse - stable to slightly improving

herbaceous understory - slightly improving

#### 1999 TREND ASSESSMENT

Trend for soil continues to be stable with adequate amounts of protective ground cover to protect the soil. Erosion that is occurring on trails is not excessive. Trend for browse appears stable with oak increasing in height. Most shrubs display light use, normal vigor and low percent decadence. Trend for the herbaceous understory is considered stable with similar sum of nested frequency values compared to 1994 estimates. Nested frequencies of most grasses and forbs did not change significantly but frequency of Kentucky bluegrass did increase significantly. It currently accounts for 54% of the grass cover and 21% of the herbaceous cover. The forb composition consists of several desirable species along with some increasers like,

western yarrow, ballhead sandwort, trailing fleabane, and Rocky Mountain iris. These less desirable species did increase in cover since 1994, but not significantly in nested frequency.

TREND ASSESSMENT

soil - stable

browse - stable

herbaceous understory - stable

HERBACEOUS TRENDS --

Herd unit 14 , Study no: 4

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'86	'94	'99	'86	'94	'99	'94	'99
G	Agropyron trachycaulum	a4	b33	b31	3	16	15	.20	.71
G	Bromus anomalus	b47	ab31	a22	21	13	11	.21	.15
G	Carex spp.	b105	ab95	a62	42	38	23	2.36	1.83
G	Festuca ovina	-	1	-	-	1	-	.00	-
G	Festuca thurberi	22	25	11	9	12	5	.97	.49
G	Koeleria cristata	b20	b43	a6	10	19	2	.39	.03
G	Muhlenbergia montana	47	42	43	19	16	17	2.15	1.01
G	Phleum pratense	1	-	-	1	-	-	-	-
G	Poa arida	-	3	-	-	1	-	.00	-
G	Poa fendleriana	a-	b27	b26	-	9	10	.46	1.20
G	Poa pratensis	a128	a156	b208	43	53	70	2.72	7.58
G	Sitanion hystrix	b28	ab25	a7	20	11	4	.13	.36
G	Stipa columbiana	11	7	8	4	3	4	.06	.31
G	Stipa comata	b49	a4	a11	24	2	5	.19	.10
G	Stipa lettermani	a-	b4	b8	-	3	4	.09	.12
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		462	496	443	196	197	170	9.98	13.92
Total for Grasses		462	496	443	196	197	170	9.98	13.92
F	Achillea millefolium	b163	a130	ab130	61	55	54	1.24	2.38
F	Agoseris glauca	b29	ab18	a9	13	7	3	.06	.04
F	Antennaria parvifolia	-	5	2	-	1	2	.03	.03
F	Arabis spp.	-	4	4	-	2	2	.01	.01
F	Arenaria congesta	60	68	53	26	27	22	.79	.79
F	Aster spp.	c68	a-	b11	25	-	6	-	.19
F	Calochortus gunnisoni	a-	b3	b6	-	3	3	.01	.01
F	Castilleja linariaefolia	32	30	29	15	15	14	.39	.48
F	Chaenactis douglasii	1	-	-	1	-	-	-	-
F	Collomia linearis (a)	-	-	1	-	-	1	-	.03
F	Collinsia parviflora (a)	-	a-	b8	-	-	6	-	.03

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'86	'94	'99	'86	'94	'99	'86	'99
F	<i>Convolvulus sepium</i>	-	3	-	-	1	-	.03	-
F	<i>Crepis acuminata</i>	3	-	-	2	-	-	-	-
F	<i>Delphinium nuttallianum</i>	a-	a-	b12	-	-	6	-	.05
F	<i>Erigeron flagellaris</i>	58	81	78	24	30	28	.46	1.69
F	<i>Eriogonum racemosum</i>	ab4	a-	b10	1	-	4	-	.04
F	<i>Erigeron speciosus</i>	53	71	51	30	28	19	1.17	1.02
F	<i>Fragaria vesca</i>	a-	ab4	b12	-	1	4	.00	.21
F	<i>Geranium caespitosum</i>	b34	ab16	a5	17	8	2	.04	.03
F	<i>Ipomopsis aggregata</i>	b17	b8	a-	7	4	-	.02	-
F	<i>Iris missouriensis</i>	a-	b24	b36	-	11	16	.59	1.07
F	<i>Lathyrus lanszwertii</i>	b156	a90	a62	66	37	20	3.03	2.22
F	<i>Ligusticum porteri</i>	b60	a-	a-	29	-	-	-	-
F	<i>Lomatium dissectum</i>	a22	b54	b46	10	27	22	.54	.54
F	<i>Lychnis drummondii</i>	-	4	-	-	1	-	.63	-
F	<i>Mertensia brevistyla</i>	a-	b6	a-	-	3	-	.01	-
F	<i>Osmorhiza occidentalis</i>	-	4	-	-	1	-	.00	-
F	<i>Penstemon spp.</i>	b34	ab1	a-	17	1	-	.03	-
F	<i>Penstemon strictus</i>	-	3	-	-	2	-	.03	-
F	<i>Phlox longifolia</i>	-	-	1	-	-	1	-	.00
F	<i>Potentilla anersina</i>	b19	a-	a-	7	-	-	-	-
F	<i>Polygonum douglasii (a)</i>	-	5	9	-	2	4	.01	.02
F	<i>Potentilla gracilis</i>	29	34	29	18	17	11	.41	.47
F	<i>Sedum lanceolatum</i>	a7	b48	b28	3	22	10	.13	.10
F	<i>Senecio neomexicanus</i>	b102	a58	a55	43	26	25	.20	.62
F	<i>Stellaria jamesiana</i>	a-	b125	b124	-	48	49	1.05	1.72
F	<i>Swertia radiata</i>	a-	b7	ab5	-	3	2	.09	.44
F	<i>Taraxacum officinale</i>	58	56	42	25	24	19	.30	.52
F	<i>Thalictrum fendleri</i>	34	34	30	14	12	12	.88	1.05
F	<i>Thermopsis montana</i>	a1	b67	c103	1	22	41	5.31	6.81
F	<i>Thlaspi montanum</i>	28	24	10	13	10	7	.05	.06
F	<i>Tragopogon dubius</i>	-	1	-	-	1	-	.00	-
F	Unknown forb-perennial	2	-	-	2	-	-	-	-
F	<i>Veronica biloba (a)</i>	-	-	2	-	-	1	-	.00
F	<i>Viguiera multiflora</i>	-	2	1	-	2	1	.01	.00
Total for Annual Forbs		0	5	20	0	2	12	0.00	0.08
Total for Perennial Forbs		1074	1083	984	470	452	405	17.64	22.68
Total for Forbs		1074	1088	1004	470	454	417	17.65	22.76

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

BROWSE TRENDS --  
Herd unit 14 , Study no: 4

Type	Species	Strip Frequency		Average Cover %	
		'04	'99	'94	'99
B	Amelanchier alnifolia	14	4	.65	.06
B	Clematis hirsutissima	0	1	.06	.09
B	Mahonia repens	0	1	-	.03
B	Populus tremuloides	0	5	.15	.33
B	Prunus virginiana	1	0	.03	-
B	Pseudotsuga menziesii	0	1	.38	1.37
B	Quercus gambelii	0	65	20.47	19.30
B	Rosa woodsii	61	41	2.92	2.76
B	Symphoricarpos oreophilus	81	76	9.23	10.48
B	Tetradymia canescens	0	0	-	-
Total for Browse		157	194	33.90	34.45

CANOPY COVER --  
Herd unit 14 , Study no: 4

Species	Percent Cover '09
Populus tremuloides	1
Pseudotsuga menziesii	2
Quercus gambelii	9

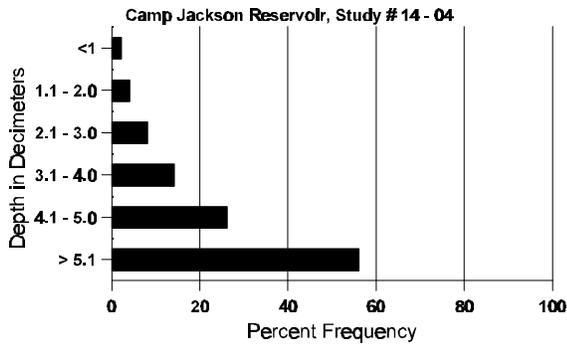
BASIC COVER --  
Herd unit 14 , Study no: 4

Cover Type	Nested Frequency		Average Cover %		
	'04	'09	'86	'94	'99
Vegetation	341	355	10.00	49.45	59.33
Rock	134	85	4.25	2.62	4.71
Pavement	129	115	3.50	1.27	2.82
Litter	363	358	64.00	42.77	54.64
Cryptogams	9	14	0	.07	.39
Bare Ground	196	197	18.25	16.64	15.57

SOIL ANALYSIS DATA --  
Herd Unit 14, Study # 04, Study Name: Camp Jackson Reservoir

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
20.9	52.8 (17.2)	5.7	48.9	26.6	24.6	3.0	5.7	124.8	0.4

# Stoniness Index



## PELLET GROUP DATA --

Herd unit 14 , Study no: 4

Type	Quadrat Frequency		Pellet Transect Days Use/Acre (ha)
	'84	'89	
Rabbit	-	1	N/A
Elk	-	1	2 (5)
Deer	1	1	1 (2)
Cattle	-	8	44 (109)

## BROWSE CHARACTERISTICS --

Herd unit 14 , Study no: 4

A G R 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.						
Amelanchier alnifolia																						
S	'86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	20	-	-	1
	'99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
Y	'86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	6	-	-	-	-	-	-	3	-	-	-	-	-	9	-	-	-	180	-	-	9
	'99	2	-	-	1	-	-	-	-	-	-	-	-	-	3	-	-	-	60	-	-	3
M	'86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	10	-	-	1	-	-	-	1	-	-	-	-	-	12	-	-	-	240	20	14	12
	'99	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	40	-	-	2
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>										
'86		00%			00%			00%														
'94		00%			00%			00%				-76%										
'99		00%			00%			00%														
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-							
												'94	420		-							
												'99	100		-							

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				
<i>Clematis hirsutissima</i>																		
S	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	1	-	-	1	-	-	-	20		1	
Y	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	16	9	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	20		-			
<i>Mahonia repens</i>																		
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	-	-	-	2	-	-	-	-	-	2	-	-	-	40	-	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	40		-			
<i>Populus tremuloides</i>																		
Y	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	5	-	-	-	-	-	-	-	-	5	-	-	-	100		5	
M	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	
	99	-	-	-	-	-	-	3	-	-	3	-	-	-	60	-	3	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	160		-			

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					
<i>Prunus virginiana</i>																		
M	86	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	94	1	-	-	-	-	-	-	-	-	-	-	-	20	12	5	1	
	99	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	20		-			
												'99	0		-			
<i>Pseudotsuga menziesii</i>																		
M	86	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	99	-	-	-	-	-	-	1	-	-	-	-	-	20	-	-	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		00%			00%			00%										
'94		00%			00%			00%										
'99		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	20		-			
<i>Quercus gambelii</i>																		
S	86	51	19	1	-	-	-	-	-	-	42	3	25	1	4733		71	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	99	26	-	-	17	-	-	-	-	-	43	-	-	-	860		43	
Y	86	42	84	11	-	-	-	-	-	-	94	14	25	4	9133		137	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	99	229	-	-	72	-	-	29	-	-	330	-	-	-	6600		330	
M	86	2	32	7	-	3	-	-	-	-	22	12	10	-	2933	41	26	44
	94	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	99	146	4	-	6	-	-	-	27	-	183	-	-	-	3660	57	35	183
D	86	2	16	11	-	-	-	-	-	-	18	6	1	4	1933		29	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	99	24	-	2	-	-	-	-	-	-	17	-	-	9	520		26	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	1380			69	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'86		64%			14%			21%										
'94		00%			00%			00%										
'99		.74%			.37%			02%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	13999	Dec:	14%			
												'94	0		0%			
												'99	10780		5%			

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					
Rosa woodsii																		
S	86	3	-	-	-	-	-	-	-	-	3	-	-	-	200		3	
	94	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	99	55	-	-	4	-	-	2	-	-	58	-	-	-	1220		61	
Y	86	11	5	-	-	-	-	-	-	-	16	-	-	-	1066		16	
	94	27	-	-	2	-	-	3	-	-	32	-	-	-	640		32	
	99	42	-	-	2	-	-	12	-	-	56	-	-	-	1120		56	
M	86	3	16	-	-	1	-	-	-	-	16	-	4	-	1333	22	8	20
	94	68	-	-	22	-	-	7	-	-	97	-	-	-	1940	14	12	97
	99	67	-	-	7	-	-	4	-	-	78	-	-	-	1560	13	9	78
D	86	-	1	8	-	-	-	-	-	-	6	-	2	1	600		9	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'86		51%				18%				16%				-14%				
'94		00%				00%				00%				+ 4%				
'99		00%				00%				00%								
Total Plants/Acre (excluding Dead & Seedlings)											'86	2999	Dec:	20%				
											'94	2580		0%				
											'99	2700		1%				
Symphoricarpos oreophilus																		
S	86	5	-	-	-	-	-	-	-	-	5	-	-	-	333		5	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	26	-	-	1	-	-	1	-	-	28	-	-	-	560		28	
Y	86	34	23	2	-	-	-	-	-	-	44	-	15	-	3933		59	
	94	22	-	-	-	-	-	-	-	-	22	-	-	-	440		22	
	99	45	3	-	2	-	-	14	-	-	64	-	-	-	1280		64	
M	86	20	69	6	-	2	-	-	-	-	57	8	31	1	6466	16	14	97
	94	186	4	-	45	-	-	4	-	-	239	-	-	-	4780	16	25	239
	99	179	9	1	19	-	-	6	-	-	214	-	-	-	4280	18	21	214
D	86	2	13	14	-	-	-	-	-	-	5	2	15	7	1933		29	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	7	-	-	-	-	-	-	-	-	4	-	-	3	140		7	
X	86	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	94	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	99	-	-	-	-	-	-	-	-	-	-	-	-	-	80		4	
% Plants Showing		<u>Moderate Use</u>				<u>Heavy Use</u>				<u>Poor Vigor</u>				<u>%Change</u>				
'86		58%				12%				37%				-58%				
'94		02%				00%				00%				+ 8%				
'99		04%				.35%				01%								
Total Plants/Acre (excluding Dead & Seedlings)											'86	12332	Dec:	16%				
											'94	5220		0%				
											'99	5700		2%				

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				
Tetradymia canescens																		
M	'86	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'94	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	'99	-	-	-	-	-	-	-	-	-	-	-	-	-	0	16	20	0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>				<u>%Change</u>						
	'86	00%			00%			00%										
	'94	00%			00%			00%										
	'99	00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'86	0	Dec:	-			
												'94	0		-			
												'99	0		-			