

JOHN STARR FLAT - TREND STUDY NO. 9-13-10

Vegetation Type: Mountain Brush

Range Type: Crucial Deer Winter, Crucial Elk Winter

NRCS Ecological Site Description: Not Available

Land Ownership: Ute Tribe

Elevation: 7378 ft. (2249 m)

Aspect: East

Slope: 12%

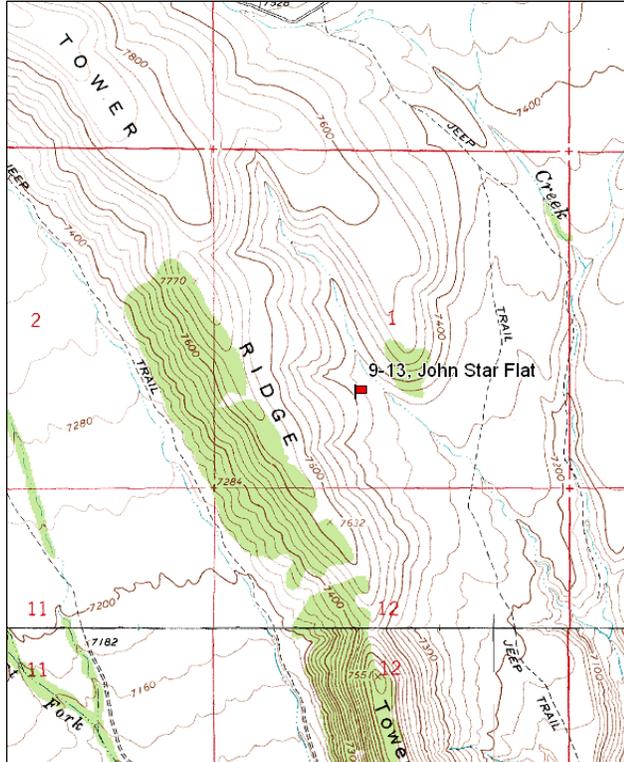
Transect bearing: 0'-100': 355° magnetic, 0'-400': 175° magnetic

Belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

Directions:

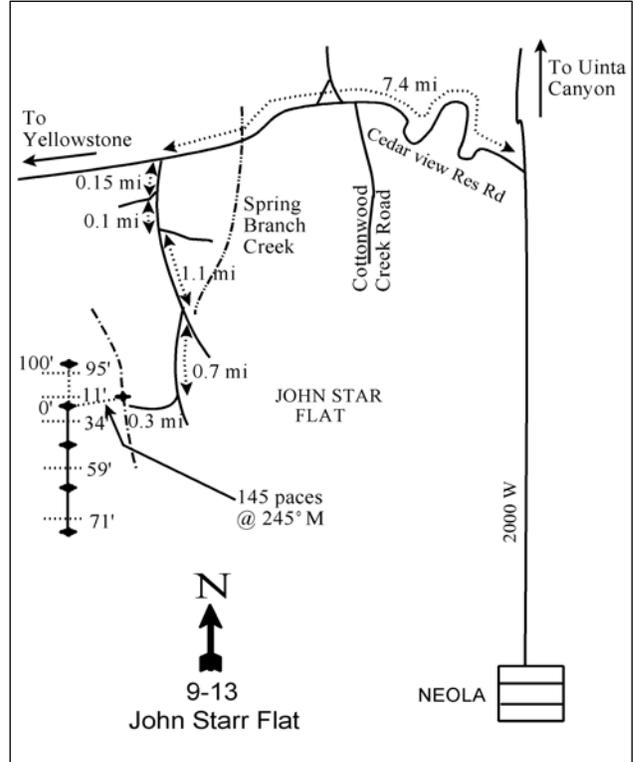
From Neola, drive north to a major fork. Turn left, west, (right fork goes to Uinta Canyon) and travel toward Yellowstone for 7.4 miles on the main road. At this point, turn left (south). Go 0.15 miles to a small fork and stay left. Continue 0.1 miles to another fork and bear right. Proceed 1.1 miles to a major fork and continue on the right fork for 0.7 miles. At the next fork turn right toward the hills to the west. Proceed 0.3 miles to the end of the road near a gully. From the end of the road, the 0-foot baseline stake is located 145 paces away at 245°M. Browse tag #7020 is on the 0-foot baseline stake.

Map Name: Heller Lake



Township: 1N Range: 3W Section: 1

Diagrammatic Sketch:



GPS: NAD 83, UTM 12T 569913 E 4484610 N

JOHN STARR FLAT - TREND STUDY NO. 9-13

Site Information

Site Description: This study is located at the northwest edge of John Starr Flat near the base of Tower Ridge. The area is within the Ute Indian Reservation and the study was established with assistance of a tribal biologist. The study is on crucial winter range for both deer and elk with domestic livestock grazing during the remainder of the year. Pellet group transect data estimated moderately heavy use by deer in 2000 with lighter use in 2005 and 2010. Estimated elk use was light in 2000 and 2010 with moderately heavy use in 2005. Cattle use appears to be minimal on this site (Table - Pellet Group Data). A group of elk were observed near the site in the summer of 2005.

Browse: There is a good mixture of a wide variety of preferred browse species on the site. The key browse species is true mountain mahogany (*Cercocarpus montanus*), which provides the highest amount of cover of any browse species (Table - Browse Trends). Other prevalent preferred browse species include Utah serviceberry (*Amelanchier utahensis*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and black sagebrush (*A. nova*). A small number of antelope bitterbrush (*Purshia tridentata*) are also scattered over the site. The true mountain mahogany is comprised of a mixture of heavily used young and mature plants with low decadence and good vigor. The plants are typically smaller, averaging just over 2 feet in height. Serviceberry is also comprised of mostly smaller plants with a few large plants scattered over the site. Utilization of serviceberry has been moderate to heavy. Decadence has been mostly low in the serviceberry population, but was high in 2005. Mountain big sagebrush and black sagebrush have moderately dense stands with mostly moderate use. Decadence of black sagebrush has been generally low with high decadence in 1988. Decadence of mountain big sagebrush has been moderately high throughout the course of the study. The small population of bitterbrush has a prostrate growth form that has displayed moderate to very heavy use over the sample years. There is also a moderately dense population of lightly used snowberry (*Symphoricarpos oreophilus*), but most plants are found growing in the shelter of other shrubs. Brittle pricklypear cactus (*Opuntia fragilis*) is abundant, but has fluctuated in density throughout the sample years (Table - Browse Characteristics).

Herbaceous Understory: Grasses are fairly diverse, but are only moderately abundant for this high potential site. Prevalent perennial grass species include needle-and-thread (*Stipa comata*), bluebunch wheatgrass (*Agropyron spicatum*), sedge (*Carex* sp.) and Indian ricegrass (*Oryzopsis hymenoides*). Cheatgrass has fluctuated over the study years, but has also been prevalent on the site at times. Forbs are especially diverse with the dominant perennial species being Hooker balsamorhiza (*Balsamorhiza hookeri*), helianthella (*Helianthella microcephala*) and rock goldenrod (*Petradoria pumila*). Annual forbs have been common in years of high precipitation, but have been rare in other sample years (Table - Herbaceous Trends).

Soil: The soils are a sandy loam with a neutral soil reaction (pH 6.7). Phosphorus may have limited availability for plant growth and development at 4.1 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). Bare ground cover is low with abundant vegetation and litter cover. Rock and pavement cover is also relatively high on the site (Table - Basic Cover). The soil erosion condition was classified as stable in 2010, but was slight in 2005 because of the formation of pedestals around plants and slight litter and soil movement.

Trend Assessments

Browse:

- **1982 to 1988 - slightly up (+1):** There was an increase in density of many of the preferred browse species on the site. Density of true mountain mahogany increased substantially due to a large increase in the recruitment of young plants.
- **1988 to 1995 - slightly up (+1):** Differences in density may be related to the larger sample area used in 1995; therefore, trend was determined using other parameters. Poor vigor of true mountain

mahogany decreased from 20% to 0% and decadence decreased from 8% to 1%. Recruitment of young plants decreased, but was still excellent at 22% of the population.

- **1995 to 2000 - stable (0):** There was little change in the density or cover of true mountain mahogany. Poor vigor increased to 16% and decadence to 6%, but recruitment of young mahogany plants remained very good at 21%.
- **2000 to 2005 - down (-2):** The key browse species, true mountain mahogany, decreased in density by 26% from 3,260 plants/acre to 2,420 plants/acre, with a slight decrease in cover. Decadence increased to 16%, but poor vigor decreased to 6%. Recruitment remained good at 20% of the population.
- **2005 to 2010 - stable (0):** There was a slight increase in the density of true mountain mahogany to 2,640 plants/acre, but cover decreased slightly from 10% to 8%. Decadence decreased to 2% and recruitment of young plants increased to 27% of the population.

Grass:

- **1982 to 1988 - no trend (NT):** Only quadrat frequency data for grasses are available from 1982, so no trend was given.
- **1988 to 1995 - down (-2):** The sum of nested frequency of perennial grasses decreased by 53%.
- **1995 to 2000 - up (+2):** The perennial grass sum of nested frequency increased by 27%, but remained well below 1988 levels. Cover of perennial grasses increased from 4% to 15%. Cheatgrass decreased significantly in nested frequency and was rare on the site.
- **2000 to 2005 - slightly down (-1):** There was little change in the sum of nested frequency of perennial grasses, but cover decreased to 11%. Cheatgrass increased significantly in nested frequency and cover increased to nearly 4%.
- **2005 to 2010 - slightly down (-1):** The sum of nested frequency of perennial grasses decreased by 17%, though cover remained similar. Cheatgrass decreased significantly in nested frequency and cover decreased to less than 1%.

Forb:

- **1982 to 1988 - no trend (NT):** Only quadrat frequency data for forbs are available from 1982, so no trend was given.
- **1988 to 1995 - slightly up (+1):** The sum of nested frequency of perennial forbs increased by 10%.
- **1995 to 2000 - down (-2):** The perennial forb sum of nested frequency decreased by 33% despite an increase in cover from 7% to 10%. Hooker balsamroot decreased significantly in nested frequency.
- **2000 to 2005 - stable (0):** There was little change in the sum of nested frequency of perennial forbs, but cover increased slightly to 11%.
- **2005 to 2010 - slightly down (-1):** The sum of nested frequency of perennial forbs decreased by 17% and cover decreased to 7%.

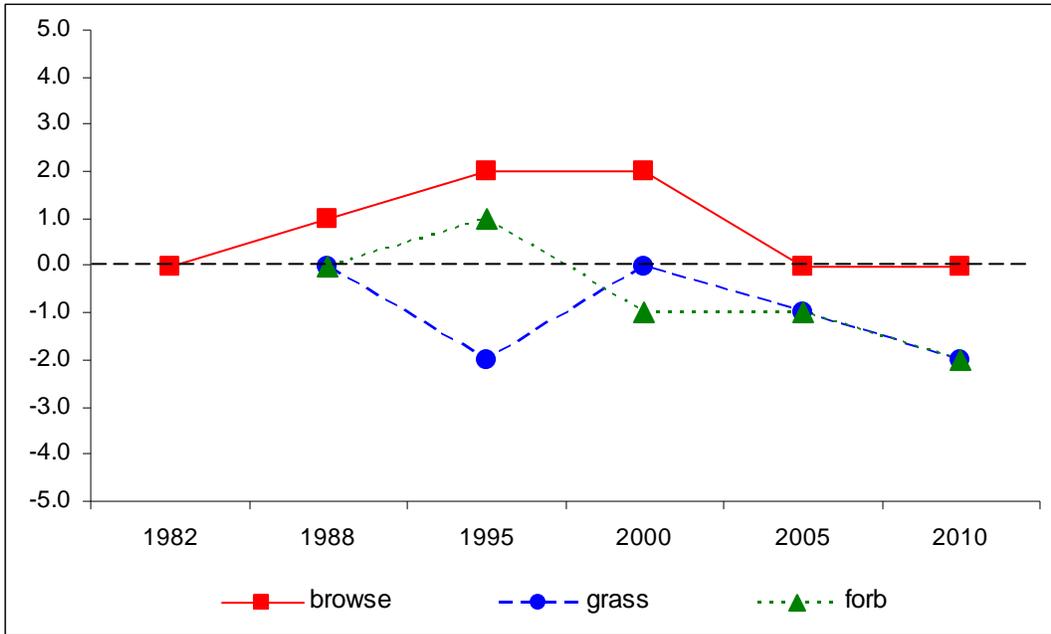
DEER DESIRABLE COMPONENTS INDEX - HIGH POTENTIAL SCALE --

Management unit 9, study no: 13

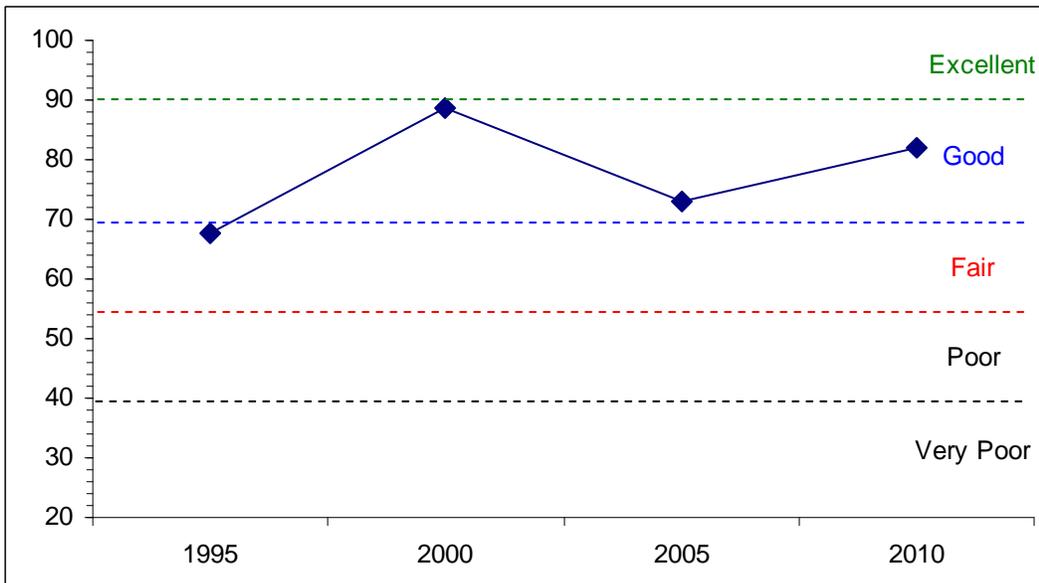
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
95	27.2	13.1	10.9	7.5	-1.0	10.0	0.0	67.7	Fair
00	30.0	11.3	8.2	29.1	0.0	10.0	0.0	88.6	Good-Excellent
05	28.2	8.2	6.8	22.7	-2.7	10.0	0.0	73.1	Good
10	28.1	13.4	9.6	21.2	-0.3	10.0	0.0	81.9	Good

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
 Management unit 9, Study no: 13



DEER DESIRABLE COMPONENTS INDEX TREND, HIGH POTENTIAL--
 Management unit 9, Study no: 13



HERBACEOUS TRENDS--
Management unit 09, Study no: 13

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
G	Agropyron dasystachyum	-	-	-	6	-	-	-	.03	-
G	Agropyron spicatum	c125	b67	b73	ab50	a33	.66	2.08	1.52	1.81
G	Bouteloua gracilis	12	4	9	11	5	.03	.33	.22	.44
G	Bromus tectorum (a)	-	b61	a14	c145	b57	1.28	.06	3.60	.46
G	Carex sp.	93	110	94	98	70	1.67	3.58	2.66	1.80
G	Koeleria cristata	5	-	5	4	5	-	.30	.20	.30
G	Oryzopsis hymenoides	a7	ab21	ab24	c62	b38	.36	.78	2.17	.90
G	Poa fendleriana	a-	a-	a2	ab5	c16	-	.00	.09	.15
G	Poa secunda	c171	a3	b29	ab9	a6	.00	.51	.04	.01
G	Sitanion hystrix	b59	a22	a17	ab41	ab26	.18	.31	.44	.16
G	Stipa comata	c175	a76	bc132	ab116	bc134	.85	6.64	3.95	5.01
Total for Annual Grasses		0	61	14	145	57	1.28	0.06	3.60	0.46
Total for Perennial Grasses		647	303	385	402	333	3.77	14.57	11.34	10.60
Total for Grasses		647	364	399	547	390	5.05	14.64	14.94	11.07
F	Agoseris glauca	-	-	-	3	6	-	-	.15	.01
F	Allium sp.	-	-	-	2	4	-	-	.02	.01
F	Antennaria rosea	b8	a-	a-	a-	a-	-	-	-	-
F	Arabis sp.	a3	b45	a1	a6	a-	.16	.00	.04	-
F	Arenaria congesta	-	-	1	-	4	-	.00	-	.01
F	Artemisia ludoviciana	6	21	17	2	9	.15	.28	.01	.09
F	Astragalus convallarius	7	6	1	-	-	.04	.01	-	-
F	Astragalus spatulatus	2	1	-	1	-	.03	-	.03	-
F	Balsamorhiza hookeri	b155	b123	b117	a68	a53	1.11	2.79	2.30	.94
F	Balsamorhiza sagittata	-	-	-	1	-	-	-	.03	-
F	Calochortus nuttallii	a6	a3	a	b31	a3	.00	.00	.10	.01
F	Castilleja linariaefolia	a-	b26	a2	a-	a-	.13	.03	-	-
F	Chenopodium leptophyllum(a)	-	b22	a7	a4	a-	.05	.02	.01	-
F	Collinsia parviflora (a)	-	-	-	8	-	-	-	.04	-
F	Collomia linearis (a)	-	d133	a1	c99	b10	.80	.00	.66	.22
F	Comandra pallida	b43	a13	ab34	a15	ab22	.14	.32	.15	.16
F	Crepis acuminata	a-	ab4	a1	b11	a-	.03	.00	.27	-
F	Cryptantha sp.	ab15	c37	a3	bc40	ab19	.27	.03	.29	.16
F	Cymopterus longipes	ab7	ab6	ab9	b21	a3	.02	.09	.22	.01
F	Delphinium nuttallianum	-	-	-	6	-	-	-	.02	-
F	Descurainia pinnata (a)	-	b19	a-	b16	a-	.04	-	.07	-
F	Draba sp. (a)	-	b58	a-	b31	a-	.11	-	.07	-
F	Erigeron flagellaris	b21	ab14	a4	a-	a1	.02	.03	-	.00
F	Erigeron pumilus	ab2	ab12	b17	a1	ab6	.03	.19	.00	.09
F	Eriogonum umbellatum	ab5	b13	ab9	a-	a3	.08	.10	-	.03
F	Gilia sp. (a)	-	-	-	4	-	-	-	.00	-
F	Helianthella microcephala	58	76	76	52	56	1.40	1.12	1.75	1.44
F	Heuchera parvifolia	4	5	-	-	-	.01	-	-	-
F	Hymenoxys acaulis	-	1	-	2	3	.00	-	.03	.00

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
F	Lappula occidentalis (a)	-	_b 104	_a 2	_b 137	_a 6	.51	.00	.54	.01
F	Lepidium densiflorum (a)	-	_c 174	_a -	_b 143	_a 8	1.28	-	.45	.02
F	Linum lewisii	-	5	-	5	-	.01	-	.03	-
F	Lithospermum ruderales	_b 15	_a 3	_a 1	_a 3	_a -	.04	.03	.15	-
F	Lychnis drummondii drummondii	3	3	-	-	-	.03	-	-	-
F	Machaeranthera grindelioides	14	18	24	24	19	.39	.73	.77	.76
F	Orobancha sp.	-	3	-	-	-	.00	-	-	-
F	Penstemon caespitosus	_b 12	_a -	_{ab} 1	_a -	_a -	-	.00	-	-
F	Penstemon humilis	_c 35	_{bc} 14	_a -	_b 13	_b 11	.09	-	.13	.18
F	Penstemon sp.	-	-	-	-	2	-	-	-	.15
F	Petrorhiza pumila	46	60	57	47	45	1.45	3.11	3.10	1.68
F	Phlox longifolia	_c 72	_{bc} 51	_a 30	_b 36	_a 2	.19	.18	.17	.00
F	Polygonum douglasii (a)	-	_c 79	_a 1	_b 46	_a -	.35	.00	.10	-
F	Schoenocrambe linifolia	_a -	_b 57	_a 7	_b 54	_b 74	.43	.01	.36	.83
F	Sedum lanceolatum	_b 55	_a 22	_a 14	_a 9	_a 20	.16	.05	.05	.06
F	Senecio multilobatus	_b 8	_{ab} 3	_{ab} 2	_{ab} 3	_a -	.63	.00	.03	-
F	Sphaeralcea coccinea	12	21	10	16	20	.19	.39	.26	.19
F	Tragopogon dubius	4	-	3	-	-	-	.00	-	-
F	Zigadenus elegans	_a -	_b 12	_b 10	_c 23	_{bc} 26	.02	.05	.22	.21
Total for Annual Forbs		0	589	11	488	24	3.15	0.03	1.96	0.25
Total for Perennial Forbs		618	678	454	495	411	7.33	9.62	10.74	7.07
Total for Forbs		618	1267	465	983	435	10.48	9.66	12.70	7.32

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

BROWSE TRENDS--

Management unit 09, Study no: 13

Type	Species	Strip Frequency				Average Cover %			
		'95	'00	'05	'10	'95	'00	'05	'10
B	Amelanchier utahensis	20	35	25	26	1.33	5.81	2.82	4.19
B	Artemisia frigida	0	8	8	10	-	.06	.18	.10
B	Artemisia nova	38	40	35	37	1.24	2.92	2.15	3.07
B	Artemisia tridentata vaseyana	38	41	49	46	5.35	3.95	5.09	4.55
B	Cercocarpus montanus	85	80	77	77	10.75	10.21	9.60	7.96
B	Chrysothamnus depressus	3	2	1	1	.06	.03	.00	-
B	Chrysothamnus nauseosus graveolens	0	1	0	1	-	-	-	-
B	Chrysothamnus viscidiflorus lanceolatus	12	12	13	7	.68	.39	.36	.24
B	Eriogonum corymbosum	1	0	2	3	-	.00	.00	.03
B	Gutierrezia sarothrae	12	8	26	35	.56	.40	.55	1.27
B	Juniperus osteosperma	0	2	2	4	.85	1.00	1.68	.63
B	Opuntia fragilis	72	68	75	66	1.28	1.51	1.68	1.31
B	Pediocactus simpsonii	2	9	3	3	-	.00	.00	-
B	Pinus edulis	0	1	1	1	.00	-	.30	.53
B	Purshia tridentata	9	5	4	6	.49	.36	.21	.15
B	Symphoricarpos oreophilus	9	15	16	16	.45	1.88	2.05	1.63
B	Tetradymia canescens	5	2	2	2	-	.03	-	-
Total for Browse		306	329	339	341	23.08	28.61	26.75	25.70

CANOPY COVER, LINE INTERCEPT--

Management unit 09, Study no: 13

Species	Percent Cover		
	'00	'05	'10
Amelanchier utahensis	-	3.68	4.61
Artemisia frigida	-	.05	.36
Artemisia nova	-	3.38	2.83
Artemisia tridentata vaseyana	-	5.73	7.51
Cercocarpus montanus	-	14.31	13.71
Chrysothamnus viscidiflorus lanceolatus	-	.55	.05
Eriogonum corymbosum	-	.06	-
Gutierrezia sarothrae	-	1.66	2.56
Juniperus osteosperma	2.00	2.83	3.45
Opuntia fragilis	-	.88	1.23
Pinus edulis	-	.70	.81
Purshia tridentata	-	1.01	.78
Symphoricarpos oreophilus	-	1.96	1.66
Tetradymia canescens	-	.20	-

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 09, Study no: 13

Species	Average leader growth (in)	
	'05	'10
Artemisia tridentata vaseyana	2.4	1.4
Cercocarpus montanus	4.5	1.7

BASIC COVER--

Management unit 09, Study no: 13

Cover Type	Average Cover %					
	'82	'88	'95	'00	'05	'10
Vegetation	12.50	7.50	41.08	48.65	50.09	44.62
Rock	2.00	4.75	9.96	12.08	12.89	11.55
Pavement	2.50	2.50	1.25	4.17	2.76	4.38
Litter	69.50	68.75	46.87	46.81	37.80	45.27
Cryptogams	.75	.75	.23	.21	.50	.01
Bare Ground	12.75	15.75	13.88	17.58	13.75	12.19

SOIL ANALYSIS DATA --

Management unit 9, Study no: 13, Study Name: John Starr Flat

Effective rooting depth (in)	pH	sandy loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
7.6	6.7	67.4	16.0	16.6	3.8	4.1	134.4	0.8

PELLET GROUP DATA--

Management unit 09, Study no: 13

Type	Quadrat Frequency			
	'95	'00	'05	'10
Rabbit	8	21	23	2
Elk	10	15	21	11
Cattle	-	-	-	-
Deer	23	19	18	13

Days use per acre (ha)		
'00	'05	'10
-	-	-
20 (50)	47 (116)	18 (45)
-	2 (4)	-
46 (114)	17 (43)	25 (63)

BROWSE CHARACTERISTICS--
Management unit 09, Study no: 13

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization		% poor vigor	Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy		
<i>Amelanchier utahensis</i>									
82	333	0	100	0	-	100	0	0	24/24
88	532	63	37	0	-	50	13	0	26/25
95	640	28	72	0	-	41	13	0	24/32
00	1060	15	74	11	60	28	45	17	32/37
05	660	6	45	48	-	33	58	12	28/37
10	900	24	76	0	-	38	24	0	25/32
<i>Artemisia frigida</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	0	0	0	-	-	0	0	0	-/-
00	220	0	100	-	-	0	0	0	9/11
05	380	0	100	-	20	0	0	0	9/8
10	460	0	100	-	-	48	0	0	12/11
<i>Artemisia nova</i>									
82	2066	16	84	0	66	52	0	0	12/17
88	4131	29	40	31	266	18	2	8	14/15
95	1560	17	79	4	40	51	15	1	9/15
00	2260	4	80	16	260	5	4	8	9/15
05	1640	1	95	4	20	39	13	1	9/15
10	2040	2	96	2	-	34	30	2	9/16
<i>Artemisia tridentata vaseyana</i>									
82	0	0	0	0	-	0	0	0	-/-
88	265	75	0	25	133	0	0	0	-/-
95	1380	22	58	20	300	49	17	13	21/33
00	1520	18	51	30	-	26	5	13	26/29
05	1460	12	58	30	-	14	11	11	17/26
10	1580	13	70	18	-	48	27	6	18/26
<i>Cercocarpus montanus</i>									
82	2865	21	74	5	-	65	7	0	21/27
88	4997	60	32	8	799	43	23	20	30/36
95	3580	22	77	1	180	60	30	0	27/38
00	3260	21	73	6	-	23	64	16	27/39
05	2420	20	64	16	-	19	69	6	29/39
10	2640	27	71	2	40	42	42	.75	25/37

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
Chrysothamnus depressus										
82	0	0	0	0	-	0	0	0	-/-	
88	332	0	80	20	-	0	0	0	4/6	
95	60	0	100	0	-	0	0	0	7/13	
00	60	0	100	0	20	0	67	0	7/13	
05	20	0	100	0	-	0	0	0	3/8	
10	20	0	100	0	-	0	0	0	-/-	
Chrysothamnus nauseosus graveolens										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	-/-	
00	60	0	100	-	-	0	100	0	-/-	
05	0	0	0	-	-	0	0	0	21/18	
10	20	0	100	-	-	0	0	0	17/21	
Chrysothamnus viscidiflorus lanceolatus										
82	0	0	0	0	-	0	0	0	-/-	
88	0	0	0	0	-	0	0	0	-/-	
95	400	5	95	0	-	0	5	0	14/17	
00	320	0	100	0	-	6	0	0	14/21	
05	400	10	85	5	-	0	0	0	14/20	
10	160	0	100	0	-	0	0	0	15/19	
Eriogonum corymbosum										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	20	0	100	-	-	0	0	0	-/-	
00	0	0	0	-	-	0	0	0	-/-	
05	80	0	100	-	-	0	0	0	8/10	
10	60	100	0	-	-	0	0	0	9/14	
Gutierrezia sarothrae										
82	66	0	100	0	-	0	0	0	9/9	
88	799	0	92	8	-	0	0	8	8/6	
95	400	0	95	5	60	0	0	0	9/10	
00	880	0	95	5	-	0	0	0	6/8	
05	1660	2	98	0	-	0	0	0	10/11	
10	2000	1	98	1	-	0	0	1	9/10	
Juniperus osteosperma										
82	66	0	100	-	-	0	0	0	47/39	
88	66	0	100	-	-	0	0	0	53/55	
95	0	0	0	-	-	0	0	0	-/-	
00	40	50	50	-	-	0	0	0	-/-	
05	40	100	0	-	-	0	0	0	-/-	
10	80	50	50	-	20	0	0	0	-/-	

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization		% poor vigor	Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy		
Opuntia fragilis									
82	2333	0	100	0	-	0	0	0	2/7
88	12131	35	49	16	1533	0	0	10	2/6
95	5440	11	89	0	60	0	0	0	3/8
00	6620	4	93	2	200	.30	0	.60	2/6
05	6260	3	97	1	-	0	0	.95	2/7
10	3540	3	97	0	-	0	0	3	2/8
Pediocactus simpsonii									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	40	0	100	-	-	0	0	0	2/3
00	300	0	100	-	-	0	0	0	2/3
05	120	50	50	-	-	0	0	0	2/3
10	100	40	60	-	-	0	0	0	2/4
Pinus edulis									
82	0	0	0	-	-	0	0	0	-/-
88	66	100	0	-	-	0	0	0	-/-
95	0	0	0	-	-	0	0	0	-/-
00	20	100	0	-	-	0	0	0	-/-
05	20	0	100	-	-	0	0	0	-/-
10	20	0	100	-	-	0	0	0	-/-
Purshia tridentata									
82	0	0	0	0	-	0	0	0	-/-
88	0	0	0	0	-	0	0	0	-/-
95	280	14	86	0	-	36	43	0	17/31
00	180	0	100	0	-	22	67	0	17/40
05	80	0	75	25	-	0	100	25	17/39
10	140	14	86	0	-	100	0	0	21/51
Symphoricarpos oreophilus									
82	1398	71	29	0	-	0	0	0	7/4
88	1132	77	23	0	-	0	0	29	9/14
95	320	19	81	0	40	19	13	0	13/26
00	860	14	86	0	-	2	0	0	8/16
05	860	0	98	2	-	0	0	2	10/17
10	1680	17	83	0	-	0	0	0	10/19
Tetradymia canescens									
82	266	0	100	0	-	75	25	25	13/14
88	199	67	33	0	-	33	0	0	7/10
95	160	13	75	13	-	63	25	0	9/13
00	40	0	0	100	-	50	50	0	16/17
05	40	0	100	0	-	50	0	0	6/15
10	40	0	100	0	-	50	0	0	6/11