

LITTLE HOLE - TREND STUDY NO. 9-9-10

Vegetation Type: Mountain Brush

Range Type: Crucial Deer Winter, Crucial Elk Winter

NRCS Ecological Site Description: Mountain Shallow Sandy Loam (Ponderosa Pine), R047XC453UT

Land Ownership: UDWR

Elevation: 7800 ft. (2378 m)

Aspect: North

Slope: 20%

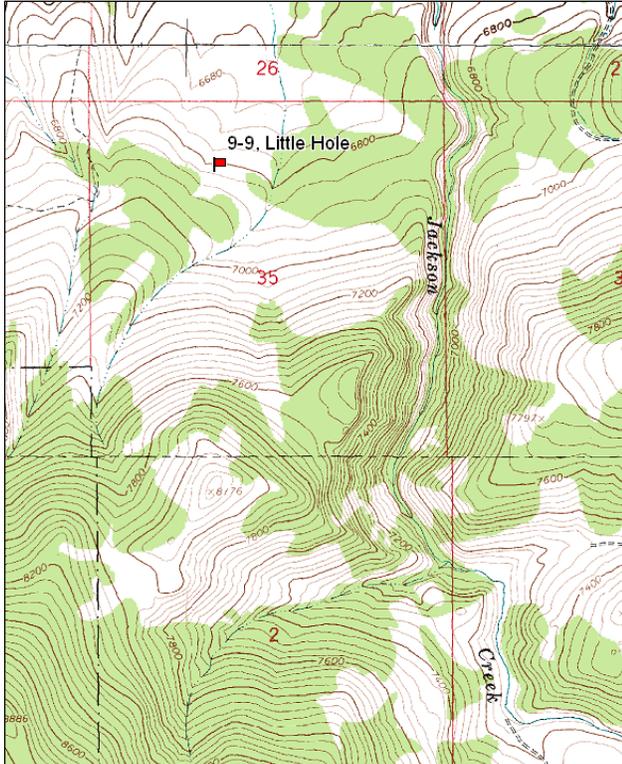
Transect bearing: 345° magnetic

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

Directions:

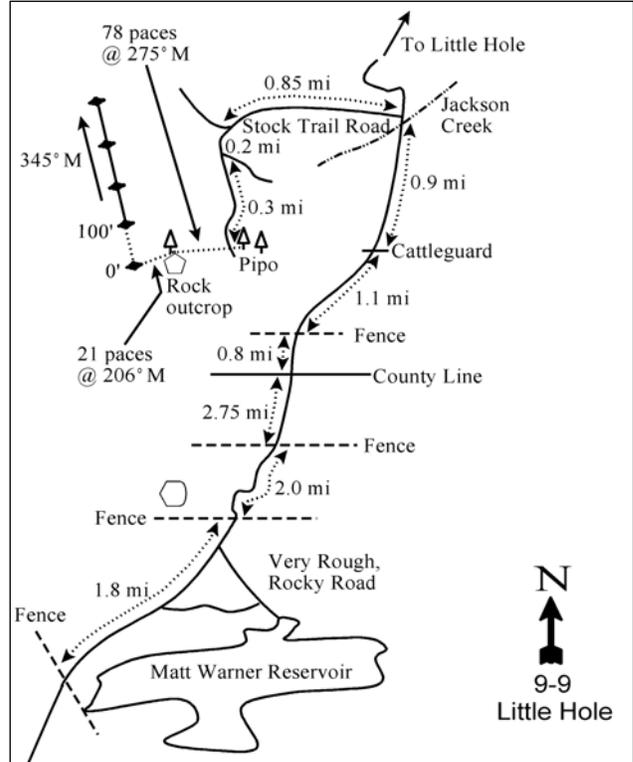
From the intersection of Highway U.S. 191 and the Diamond Mountain Road, take the Diamond Mountain Road north to a fork with a sign indicating Brown's Park Road 10 miles and Vernal 36 miles. Turn left (north) towards Jackson Draw and proceed down Jackson Draw toward Little Hole. When you get to Matt Warner Reservoir, continue past a fence for 1.8 miles to another fence. Continue on the very rocky road for 2.0 miles to the next fence, passing a pond on the left. Go through this fence and drive 2.75 miles to the county line. Continue 0.8 miles past the county line to a fence. From here, drive 1.1 miles to a cattle guard and continue 0.9 miles to Jackson Creek. Just after crossing Jackson Creek make a left turn and proceed 0.85 miles to an intersection. Bear left, drive 0.2 miles to a fork. Proceed to the right for 0.3 miles to two large ponderosa pine (*Pinus ponderosa*) trees near the road. From the trees, walk southwest (275°M) for 78 paces to a large rock outcropping just below another large ponderosa. From this tree, the 0-foot baseline stake is 21 paces at 206°M.

Map Name: Jackson Draw



Township: 2N Range: 23E Section: 35

Diagrammatic Sketch:



GPS: NAD 83, UTM 12T 644043 E 4525713 N

LITTLE HOLE - TREND STUDY NO. 9-9

Site Information

Site Description: The study samples a mixed mountain brush community with scattered pinyon pine (*Pinus edulis*) Utah juniper (*Juniperus osteosperma*), Ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*) overlooking the Green River at Little Hole. This site is managed by the Utah Division of Wildlife Resources (UDWR) as part of the Little Hole Wildlife Management Area (WMA). The state section is small and is surrounded by Bureau of Land Management (BLM) lands, which are grazed by cattle as part of the Little Hole allotment. It appears that the BLM area to the north of the site was treated between 2005 and 2010 to remove pinyon and juniper. Most of the transect was not treated, but several small trees were removed on the lower portion of the transect. Pellet group transect data has indicated moderate use by deer, light use by elk and occasional use by moose since 2000. Estimated cattle use has been light since 2000 (Table - Pellet Group Data). Cattle were present on the site when it was read in 2010.

Browse: Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and antelope bitterbrush (*Purshia tridentata*) are the key browse species. Combined, the two species provide the majority of the browse cover on the site, though sagebrush cover has decreased steadily since 2000 (Table - Browse Trends). Sagebrush consists of a dense stand of mostly mature plants, but density has decreased since 1995. Decadence in sagebrush has been generally high over the study, but was more moderate in 1982, 1995, and 2010. Utilization of sagebrush has been light to moderate over the course of the study. Antelope bitterbrush is more highly preferred and has shown heavier utilization than sagebrush. The population is comprised of mostly mature plants with low decadence and good vigor. A small number of true mountain mahogany (*Cercocarpus montanus*) and serviceberry (*Amelanchier utahensis*) are also present. Both species have had moderate to heavy use, but maintain healthy populations with low decadence and good vigor. Other browse species found on the site include mountain low rabbitbrush (*Chrysothamnus viscidiflorus* ssp. *lanceolatus*), slenderbush eriogonum (*Eriogonum microthecum*), broom snakeweed (*Gutierrezia sarothrae*), Oregon grape (*Mahonia repens*) and snowberry (*Symphoricarpos oreophilus*) (Table - Browse Characteristics). There is also a small stand of pinyon pine and Utah juniper scattered over the site (Table - Point-Quarter Tree Data) with a few Ponderosa pine and Douglas fir trees.

Herbaceous Understory: Grasses are diverse and abundant on the site, though they are dominated by the introduced species Kentucky bluegrass (*Poa pratensis*) which provides the majority of the grass cover. Other common perennial grass species include thickspike wheatgrass (*Agropyron dasystachyum*), oniongrass (*Melica bulbosa*), Sandberg bluegrass (*P. secunda*) and needle-and-thread (*Stipa comata*). Forbs have been diverse, but not particularly abundant during any reading. The only common species are hairy goldaster (*Heterotheca villosa*) and silvery lupine (*Lupinus argenteus*) and they provide little cover (Table - Herbaceous Trends).

Soil: Soils are derived from igneous parent material and have a sandy clay loam texture and a slightly acidic soil reaction (pH 6.2) (Table - Soil Analysis Data). Bare ground cover is low with a large amount of vegetation and litter cover. There is a moderate amount of rock cover that also provides good protective ground cover (Table - Basic Cover). The soil erosion condition was classified as stable in 2005 and 2010.

Trend Assessments

Browse:

- **1982 to 1988 - slightly up (+1):** The density of mountain big sagebrush and bitterbrush both increased substantially. However, decadence of sagebrush increased from 18% to 74% of the population. The increase in density of bitterbrush was primarily due to a substantial increase in the recruitment of young plants, many of which may not survive to maturity.
- **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. Decadence of sagebrush decreased

to 19%, but recruitment of young plants decreased from 11% to 7%. The bitterbrush population remained similar.

- **1995 to 2000 - down (-2):** The density of mountain big sagebrush decreased 21% from 4,220 plants/acre to 3,320 plants/acre, but cover increased from 15% to 17%. Decadence of sagebrush increased to 47% and recruitment of young plants decreased to 5%. The density of bitterbrush decreased by 13% from 1,780 plants/acre to 1,540 plants/acre, but cover increased slightly from 8% to 9%. Decadence of bitterbrush increased from 1% to 12% and recruitment of young plants decreased to 5%.
- **2000 to 2005 - slightly down (-1):** The trend for the two primary browse species is mixed. Density of mountain big sagebrush decreased by 22% to 2,600 plants/acre and cover decreased to 11%. Decadence of sagebrush remained high at 46% and poor vigor increased from 5% to 29%. Recruitment of young sagebrush plants was very poor at 2%. Bitterbrush density, however, increased by 21% to 1,860 plants/acre and cover increased to 14%.
- **2005 to 2010 - slightly up (+1):** The density of both mountain big sagebrush and bitterbrush remained similar. Decadence of sagebrush decreased to 17% and poor vigor decreased to 14%. Recruitment of young sagebrush plants increased to 15% of the population. Bitterbrush decadence also decreased from 13% to 0%.

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 - slightly down (-1):** The sum of nested frequency of perennial grasses decreased by 12%.
- **1995 to 2000 - down (-2):** The perennial grass sum of nested frequency decreased by 23% despite an increase in cover from 11% to 21%. The increase in cover was due to a significant increase in the nested frequency of Kentucky bluegrass with a subsequent increase in cover.
- **2000 to 2005 - up (+2):** The sum of nested frequency of perennial grasses increased by 22% and cover increased to 23%.
- **2005 to 2010 - slightly down (-1):** There was an 11% decrease in the sum of nested frequency of perennial grasses. Cover increased to 25%, but is dominated by Kentucky blue grass, which is an increaser species.

Forb:

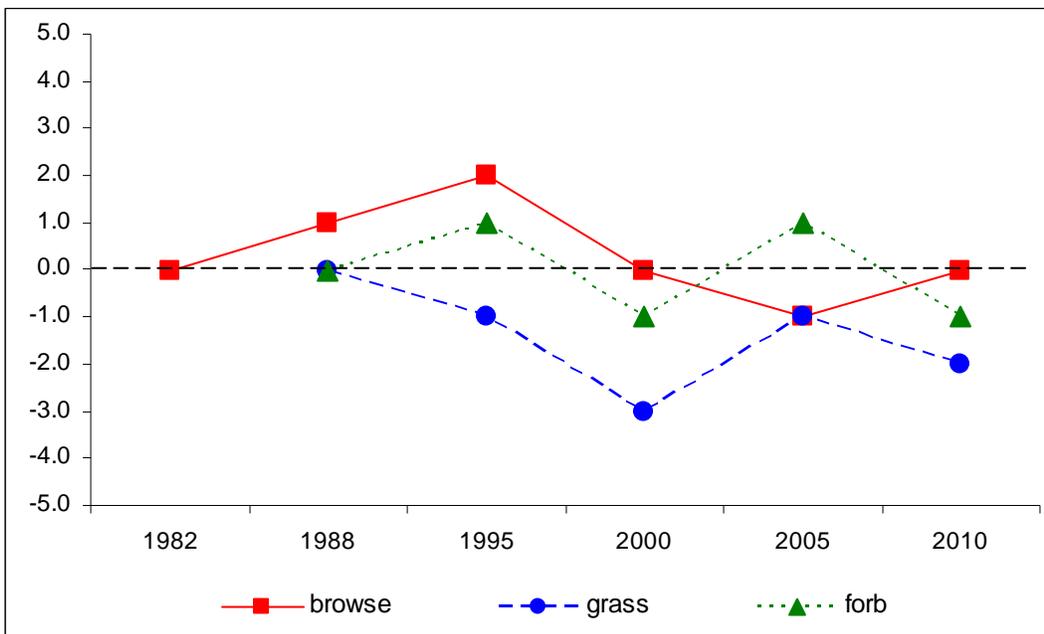
- **1982 to 1988 - no trend (NT):** Only quadrat frequency data for forbs are available from 1982, so no trend was given.
- **1988 to 1995 - slightly up (+1):** The sum of nested frequency of perennial forbs increased by 23%, but forbs remain fairly rare on the site.
- **1995 to 2000 - down (-2):** The perennial forb sum of nested frequency decreased by 43%, but cover remained similar.
- **2000 to 2005 - up (+2):** There was a 60% increase in the sum of nested frequency, returning to 1995 levels. Perennial forb cover increased to 6% with a large increase in the cover of silvery lupine.
- **2005 to 2010 - down (-2):** The sum of nested frequency of perennial forbs decreased by 38%, returning to 2000 levels. Cover of perennial forbs decreased to 3%.

DEER DESIRABLE COMPONENTS INDEX - HIGH POTENTIAL SCALE --
 Management unit 9, study no: 9

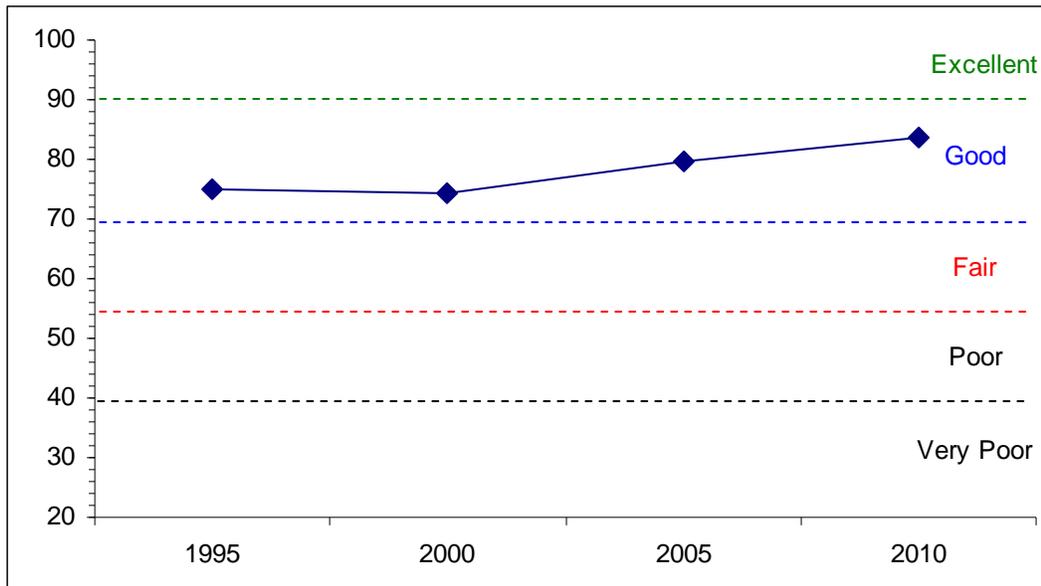
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
95	30.0	11.5	5.1	22.7	-0.3	6.2	0.0	75.1	Good
00	30.0	5.7	3.2	30.0	0.0	5.6	0.0	74.5	Good
05	30.0	7.2	2.5	30.0	-0.1	10.0	0.0	79.7	Good
10	30.0	13.1	5.2	30.0	-0.4	5.9	0.0	83.8	Good

Trend Summary

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



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



HERBACEOUS TRENDS--
 Management unit 09, Study no: 9

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
G	Agropyron dasystachyum	a53	ab92	b115	b94	b123	1.24	1.89	1.49	4.11
G	Agropyron spicatum	c97	bc70	ab41	a39	a13	.84	1.12	1.03	.62
G	Bromus tectorum (a)	-	b50	a3	ab25	ab26	.45	.00	.12	.55
G	Carex sp.	2	9	7	1	4	.17	.18	.03	.06
G	Koeleria cristata	c61	ab5	a-	b13	ab4	.02	-	.22	.06
G	Melica bulbosa	a27	c98	ab43	b60	ab32	1.87	.69	1.89	.42
G	Poa fendleriana	a28	b92	a35	a12	a11	1.38	.92	.34	.11
G	Poa pratensis	a90	a140	b206	b231	b258	3.18	14.19	11.21	16.75
G	Poa secunda	c150	b75	a27	ab50	ab72	1.00	.22	1.50	1.87
G	Sitanion hystrix	b113	a33	a12	a18	a16	.35	.22	.56	.33
G	Stipa comata	d144	b57	a20	c96	ab33	1.03	.80	3.87	.61
G	Stipa lettermani	ab8	ab8	ab16	b24	a5	.21	.39	.73	.06
Total for Annual Grasses		0	50	3	25	26	0.45	0.00	0.12	0.55
Total for Perennial Grasses		773	679	522	638	571	11.33	20.68	22.90	25.03
Total for Grasses		773	729	525	663	597	11.79	20.68	23.03	25.58
F	Agoseris glauca	a-	bc15	ab3	c22	ab2	.06	.00	.13	.00
F	Alyssum alyssoides (a)	-	-	-	1	3	-	-	.03	.00
F	Antennaria rosea	15	8	16	9	18	.48	.86	.48	.66
F	Arabis sp.	3	3	-	5	-	.00	-	.01	-
F	Astragalus convallarius	1	11	12	5	5	.09	.39	.06	.06
F	Astragalus sp.	1	-	-	-	-	-	-	-	-
F	Calochortus nuttallii	-	3	-	2	-	.01	-	.02	-
F	Castilleja linariaefolia	-	1	-	-	-	.06	-	-	-
F	Chaenactis douglasii	b13	a-	ab1	a-	a-	-	.00	-	-

Type	Species	Nest Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
F	<i>Collinsia parviflora</i> (a)	-	_d 252	_b 10	_c 165	_a -	2.74	.02	.95	-
F	<i>Collomia linearis</i> (a)	-	_c 109	_a -	_b 41	_a 4	.33	-	.22	.01
F	<i>Comandra pallida</i>	_a -	_b 29	_{bc} 25	_{bc} 32	_c 43	.26	.18	.82	.54
F	<i>Crepis acuminata</i>	_b 8	_{ab} 7	_a -	_{ab} 3	_a -	.04	-	.06	-
F	<i>Cystopteris fragilis</i>	4	-	-	-	-	-	-	-	-
F	<i>Delphinium nuttallianum</i>	-	6	-	7	-	.01	-	.02	-
F	<i>Descurainia pinnata</i> (a)	-	2	-	4	-	.00	-	.03	-
F	<i>Draba sp.</i> (a)	-	-	-	3	-	-	-	.00	-
F	<i>Erigeron eatonii</i>	_b 15	_{ab} 1	_{ab} 7	_a -	_{ab} 2	.00	.01	.00	.00
F	<i>Eriogonum umbellatum</i>	2	-	2	-	-	-	.00	-	-
F	<i>Gayophytum ramosissimum</i> (a)	-	3	-	3	-	.00	-	.01	-
F	<i>Heterotheca villosa</i>	_b 84	_a 51	_a 40	_a 30	_a 27	1.01	.73	.96	1.02
F	<i>Ipomopsis aggregata</i>	3	6	5	-	10	.02	.06	.01	.07
F	<i>Lepidium densiflorum</i> (a)	-	7	-	4	3	.02	-	.04	.00
F	<i>Linum lewisii</i>	-	3	-	-	5	.00	-	.00	.01
F	<i>Lithospermum ruderales</i>	4	1	1	2	-	.03	.00	.18	.15
F	<i>Lomatium sp.</i>	-	7	-	7	-	.02	-	.04	-
F	<i>Lupinus argenteus</i>	_a -	_{cd} 38	_b 11	_d 49	_{bc} 22	.69	.10	2.15	.36
F	<i>Lychnis drummondii</i>	-	-	-	2	-	-	-	.00	-
F	<i>Microsteris gracilis</i> (a)	-	4	2	8	1	.01	.00	.01	.00
F	<i>Navarretia intertexta</i> (a)	-	-	-	1	-	-	-	.00	-
F	<i>Orobancha sp.</i>	-	5	-	5	-	.03	-	.06	-
F	<i>Penstemon sp.</i>	3	-	-	-	-	-	-	-	-
F	<i>Petroradia pumila</i>	7	-	-	-	-	-	-	-	-
F	<i>Phlox hoodii</i>	-	2	3	3	1	.00	.15	.15	.00
F	<i>Polygonum douglasii</i> (a)	-	_b 19	_a 8	_a 8	_a 1	.06	.02	.01	.01
F	<i>Sphaeralcea coccinea</i>	24	17	13	9	9	.09	.20	.09	.02
F	<i>Taraxacum officinale</i>	_b 17	_b 16	_a -	_{ab} 8	_a 2	.07	-	.08	.01
F	<i>Tragopogon dubius</i>	_b 9	_a -	_a -	_a -	_{ab} 1	-	-	.00	.03
F	<i>Trifolium gymnocarpon</i>	_a -	_b 29	_a 6	_b 31	_a -	.06	.04	.11	-
F	<i>Zigadenus paniculatus</i>	_a -	_a 2	_{ab} 4	_b 7	_a -	.00	.06	.10	-
Total for Annual Forbs		0	396	20	238	12	3.18	0.05	1.34	0.03
Total for Perennial Forbs		213	261	149	238	147	3.09	2.82	5.60	2.97
Total for Forbs		213	657	169	476	159	6.27	2.87	6.94	3.00

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

BROWSE TRENDS--

Management unit 09, Study no: 9

Type	Species	Strip Frequency				Average Cover %			
		'95	'00	'05	'10	'95	'00	'05	'10
B	Amelanchier utahensis	6	4	6	4	.03	.41	.93	.03
B	Artemisia tridentata vaseyana	91	82	71	77	15.07	16.77	11.15	9.38
B	Cercocarpus montanus	16	13	12	20	1.31	1.69	2.90	3.41
B	Chrysothamnus viscidiflorus lanceolatus	4	4	1	1	.18	.06	-	.03
B	Eriogonum heracleoides	2	1	3	1	.18	-	-	-
B	Eriogonum microthecum	32	24	22	19	1.07	1.12	.87	.55
B	Gutierrezia sarothrae	6	0	1	1	-	-	.15	.15
B	Juniperus scopulorum	0	0	0	1	-	-	-	-
B	Mahonia repens	2	0	0	0	-	-	-	-
B	Opuntia sp.	0	0	0	1	-	-	-	-
B	Pinus edulis	0	4	6	5	1.74	2.24	5.44	3.52
B	Pinus ponderosa	0	0	0	0	.38	-	-	-
B	Purshia tridentata	51	56	56	61	7.84	9.34	13.51	12.24
B	Symphoricarpos oreophilus	16	15	21	23	1.53	2.60	4.44	6.52
B	Tetradymia canescens	0	1	1	1	-	-	.15	-
Total for Browse		226	204	200	215	29.36	34.25	39.58	35.86

CANOPY COVER, LINE INTERCEPT--

Management unit 09, Study no: 9

Species	Percent Cover		
	'00	'05	'10
Amelanchier utahensis	-	1.54	.41
Artemisia tridentata vaseyana	-	9.61	12.01
Cercocarpus montanus	-	3.59	6.51
Chrysothamnus viscidiflorus lanceolatus	-	.20	-
Eriogonum heracleoides	-	.11	-
Eriogonum microthecum	-	1.03	1.01
Pinus edulis	2.00	7.48	7.75
Pinus ponderosa	-	-	1.13
Purshia tridentata	-	22.01	20.58
Symphoricarpos oreophilus	-	10.26	7.66
Tetradymia canescens	-	.03	-

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 09, Study no: 9

Species	Average leader growth (in)	
	'05	'10
Artemisia tridentata vaseyana	2.4	2
Purshia tridentata	4.1	3.3

POINT-QUARTER TREE DATA--

Management unit 09, Study no: 9

Species	Trees per Acre				Average diameter (in)			
	'95	'00	'05	'10	'95	'00	'05	'10
Juniperus Osteosperma	6	8	20	20	3.2	6.7	5.4	4.8
Pinus edulis	9	42	72	72	2.5	1.8	3.5	2.1

BASIC COVER--

Management unit 09, Study no: 9

Cover Type	Average Cover %					
	'82	'88	'95	'00	'05	'10
Vegetation	8.75	12.25	52.22	56.11	57.41	60.65
Rock	6.00	12.50	8.00	5.73	6.80	7.85
Pavement	.25	.75	.20	.90	.14	.05
Litter	64.50	61.50	64.56	66.65	49.31	44.50
Cryptogams	5.00	4.25	1.27	1.97	1.02	2.02
Bare Ground	15.50	8.75	3.90	8.44	5.46	8.95

SOIL ANALYSIS DATA --

Management unit 9, Study no: 9, Study Name: Little Hole

Effective rooting depth (in)	pH	sandy clay loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
12.5	6.2	64.4	18.0	20.6	2.6	6.4	153.6	0.5

PELLET GROUP DATA--

Management unit 09, Study no: 9

Type	Quadrat Frequency				Days use per acre (ha)		
	'95	'00	'05	'10	'00	'05	'10
Rabbit	4	13	27	2	-	-	-
Moose	1	1	-	-	2 (5)	-	1 (1)
Elk	4	3	7	5	6 (15)	9 (23)	9 (23)
Deer	15	12	8	15	28 (69)	38 (93)	27 (66)
Cattle	6	7	10	7	9 (22)	15 (36)	9 (22)

BROWSE CHARACTERISTICS--

Management unit 09, Study no: 9

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	33	0	100	0	-	100	0	0	27/22
88	66	50	50	0	-	0	0	0	26/20
95	120	17	83	0	-	33	0	33	29/38
00	120	33	67	0	-	17	17	17	35/44
05	280	36	57	7	20	50	50	0	32/37
10	100	40	60	0	-	20	0	0	27/31
<i>Artemisia tridentata vaseyana</i>									
82	1998	2	80	18	-	57	2	3	17/23
88	3565	11	15	74	-	42	3	4	16/20
95	4220	7	74	19	20	45	2	4	23/34
00	3320	5	48	47	140	1	0	5	25/32
05	2600	2	52	46	540	26	12	29	28/34
10	2780	15	68	17	160	19	5	14	25/32
<i>Ceanothus fendleri</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	0	0	0	-	-	0	0	0	-/-
00	0	0	0	-	-	0	0	0	-/-
05	0	0	0	-	-	0	0	0	8/23
10	0	0	0	-	-	0	0	0	12/26
<i>Cercocarpus montanus</i>									
82	33	0	100	0	-	100	0	0	28/31
88	66	50	50	0	99	50	50	0	22/31
95	380	11	89	0	20	21	11	0	37/50
00	280	21	71	7	-	29	21	21	35/49
05	280	7	71	21	-	21	79	0	39/45
10	460	17	83	0	-	13	26	0	45/47
<i>Chrysothamnus viscidiflorus lanceolatus</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	220	0	100	-	-	0	0	0	16/19
00	180	22	78	-	-	0	0	0	14/10
05	60	0	100	-	-	0	100	0	16/19
10	20	0	100	-	-	0	0	0	16/21

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>Eriogonum heracleoides</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	40	0	100	-	-	0	0	0	7/19
00	40	0	100	-	-	0	0	0	-/-
05	60	0	100	-	-	0	0	0	9/21
10	20	0	100	-	-	0	0	0	4/17
<i>Eriogonum microthecum</i>									
82	199	0	100	0	-	0	0	17	9/8
88	731	36	50	14	33	0	0	9	7/6
95	1960	3	97	0	-	0	0	0	11/16
00	1100	9	89	2	40	2	0	0	9/11
05	740	5	92	3	-	5	3	0	8/12
10	740	8	92	0	-	8	0	0	10/14
<i>Gutierrezia sarothrae</i>									
82	266	0	100	-	-	0	0	0	9/6
88	166	0	100	-	-	0	0	0	7/6
95	160	0	100	-	-	0	0	0	10/10
00	0	0	0	-	-	0	0	0	-/-
05	20	0	100	-	-	0	0	0	11/17
10	20	0	100	-	-	0	0	0	11/16
<i>Juniperus scopulorum</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	0	0	0	-	-	0	0	0	-/-
00	0	0	0	-	-	0	0	0	-/-
05	0	0	0	-	-	0	0	0	-/-
10	20	100	0	-	-	0	0	0	-/-
<i>Mahonia repens</i>									
82	0	0	0	-	-	0	0	0	-/-
88	0	0	0	-	-	0	0	0	-/-
95	40	100	0	-	-	0	0	0	4/5
00	0	0	0	-	-	0	0	0	-/-
05	0	0	0	-	-	0	0	0	-/-
10	0	0	0	-	-	0	0	0	-/-
<i>Opuntia sp.</i>									
82	233	0	100	0	-	0	0	0	6/9
88	331	60	30	10	-	0	0	30	4/6
95	0	0	0	0	-	0	0	0	4/7
00	0	0	0	0	-	0	0	0	7/22
05	0	0	0	0	-	0	0	0	6/11
10	20	0	100	0	-	0	0	0	5/16

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization			Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy	% poor vigor	
Pinus edulis									
82	33	100	0	0	-	0	0	0	-/-
88	33	100	0	0	66	0	0	0	-/-
95	0	0	0	0	-	0	0	0	-/-
00	80	50	50	0	20	0	0	0	-/-
05	120	33	50	17	40	0	0	0	-/-
10	100	60	40	0	40	0	0	0	-/-
Pinus ponderosa									
82	66	50	50	-	-	0	0	0	41/69
88	133	100	0	-	-	0	0	0	-/-
95	0	0	0	-	-	0	0	0	-/-
00	0	0	0	-	-	0	0	0	-/-
05	0	0	0	-	-	0	0	0	-/-
10	0	0	0	-	-	0	0	0	-/-
Purshia tridentata									
82	399	17	83	0	-	33	0	0	22/32
88	1864	70	27	4	399	25	7	4	17/24
95	1780	17	82	1	20	49	1	0	22/50
00	1540	5	83	12	-	6	26	4	25/49
05	1860	5	82	13	-	42	54	3	24/45
10	1880	5	95	0	40	30	6	0	26/44
Symphoricarpos oreophilus									
82	0	0	0	0	-	0	0	0	-/-
88	0	0	0	0	-	0	0	0	-/-
95	460	35	65	0	20	0	0	0	20/43
00	520	12	88	0	-	0	0	0	12/28
05	1260	6	92	2	-	0	0	0	21/37
10	1860	16	84	0	-	0	0	0	21/35
Tetradymia canescens									
82	0	0	0	0	-	0	0	0	-/-
88	0	0	0	0	-	0	0	0	-/-
95	0	0	0	0	-	0	0	0	13/22
00	40	0	50	50	-	0	0	0	17/24
05	20	0	100	0	-	0	0	0	17/30
10	20	0	100	0	-	0	0	0	-/-