Trend Study 19B-2-07

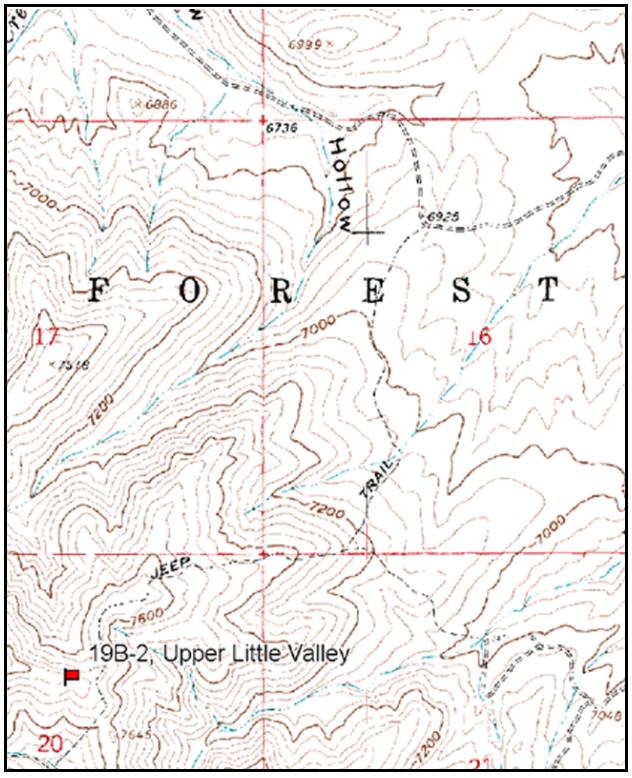
Study site name: Upper Little Valley . Vegetation type: Mountain Brush .

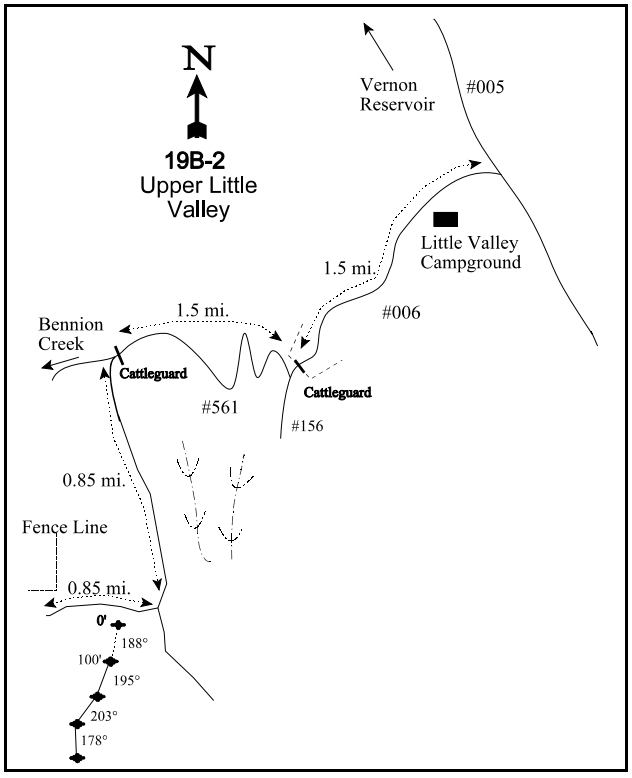
Compass bearing: frequency baseline 188 degrees magnetic (Line 2 @ 195°M, line 3 @ 203°M, line 4 178°M).

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft). Rebar: belt 4 on 4ft.

LOCATION DESCRIPTION

The steep, rocky road leading to this study site can be reached on the Little Valley road either by traveling east 2.5 miles from Bennion Creek or west 2.6 miles from the Little Valley Campground. Turn south, and go 0.85 to an intersection. Bear right and continue southerly up the ridge for 0.85 miles to a fence corner on the ridge line. Continue up along the fence to the l9th fencepost. From this fencepost, the 0-foot baseline stake is 33 paces away at an azimuth of 169 degrees. This stake is marked by a red tag, #3928.





Map Name: Dutch Peak

Diagrammatic Sketch

Township 10S , Range 5W , Section 20

GPS: NAD 83, UTM 12S 377780 E 4422418 N

DISCUSSION

Upper Little Valley - Trend Study No. 19B-2

Study Information

This study samples deer summer range near the head of Little Valley on land administered by the U.S. Forest Service [elevation: 7,700 feet (2,347 m), slope: 25%-30%, aspect: south]. Numerous intermittent and perennial streams in the area provide good distribution of water. However, thermal and escape cover is inadequate as most of the surrounding area is occupied by low-growing shrubs. Only in the canyon bottoms does vegetation exceed 5 feet (1.5 m) in height. The study is moderately used by deer, with elk and cattle use being light. From the pellet group transect, there were an estimated 42 deer days use/acre (104 ddu/ha) in 2002 and 38 deer days use/acre (93 ddu/ha) in 2007. Elk use was estimated at 2 days use/acre (5 edu/ha) in 2002 and increased to 15 days use/acre (36 edu/ha) in 2007. Cattle use was estimated at 9 days use/acre (21 cdu/ha) in 2002 and 2 days use/acre (4 cdu/ha) in 2007. Most of the deer and elk pellets appeared to be from winter/early spring use. The cattle pats appeared to be at least one year old. Thirteen deer were observed near the study in 2002.

Soil

The study lies within the Podmor-Onaqui-Rock outcrop association, and generally consists of shallow to moderately deep, well-drained soil. Soil depths were 10-23 inches (25-58 cm). Soils in this series formed in colluvium and residuum derived predominantly from quartzite, and are found on mountainsides and ridges (USDA-NRCS 2007). On the study, the soil is relatively shallow and rocky with numerous basalt rocks and outcrops noticeable in the immediate area. The soil has a sandy clay loam and has a slightly acidic reactivity (pH of 6.2). Relative bare ground cover has fluctuated between 7% and 15%, except in 2002 when bare ground cover was 27%. Although the weather station in herd subunit 19B did not report any precipitation data for 2002, there was a region-wide drought that year (Utah Climate Summaries 2007). The drought is expected to have caused the increase of bare ground cover. Litter cover was the dominant cover type until 2007, when vegetation was dominant. The erosion condition was classified as slight in 2002 and 2007. A moderate level of surface rock movement and soil pedestalling provided the most evidence of erosion.

Browse

The most abundant preferred browse is Saskatoon serviceberry (*Amelanchier alnifolia*), which increased in canopy cover from 8% in 2002 to 11% in 2007. The estimated density increased from 733 plants/acre (1,814 plants/ha) in 1983 to 1,199 plants/acre (2,968 plants/ha) in 1989, and decreased to 640 plants/acre (1,584 plants/ha) in 1997. In 2002, there were an estimated 700 plants/acre (1,733 plants/ha), and in 2007 the density decreased to 480 plants/acre (1,188 plants/ha). No seedlings have been sampled in any sample year. Young plants comprised 44% of the population in 1989 and 6% in 1997, but have not been sampled otherwise. Prior to 1997, approximately 20% of the population was decadent. In subsequent sample years, 0%-3% of the population has been decadent. There have been few dead or dying plants. Nearly half of the plants had poor vigor in 2002; otherwise between 0% and 9% of the population has exhibited poor vigor. It was reported in 2002 that serviceberry plants were not producing flowers or annual leader growth, and were losing many leaves due to the extremely dry conditions. Although there were some chlorotic plants observed in 2007, average annual leader growth was 2.6 inches (6.6 cm). Browse use has been mostly moderate-heavy in all sample years. Tent caterpillars (*Malacosoma* sp.) were present on most serviceberry plants in 1983.

Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) provides additional preferred browse. Sagebrush canopy cover was 3% in 2002 and 5% in 2007. The estimated density increased from 800 plants/acre (1,980 plants/ha) in 1983 to 1,198 plants/acre (2,965 plants/ha) in 1989, and decreased to 340 plants/acre (842 plants/ha) in 1997. By 2007, the estimated density had increased to 620 plants/acre (1,535 plants/ha). The population consists of mostly mature plants. There had been no seedlings measured until 2007, when there were approximately 140 seedlings/acre (347 seedlings/ha). Young plants comprised 35% of the sagebrush

population in 2007, but recruitment has been low in other sample years. Decadence has ranged from a low of 0% of the population to a high of 22%. Dying plants have comprised 10% or less of the population, and the density of dead plants has been decreasing since 1997. Plants exhibiting poor vigor accounted for 56% of the population in 1989, but vigor has been good otherwise. Sagebrush annual leader growth averaged 1.6 inches (4.1 cm) in 2002 and 2007. Browse use has been light-moderate.

Although mountain snowberry (*Symphoricarpos oreophilus*) has a lower forage value than Saskatoon serviceberry or mountain big sagebrush, and is not usually considered a key browse species, there has been some browse use at this study. Wildlife may use this species because it is more abundant than the two preferred browse species. Snowberry canopy cover was 18% in both 2002 and 2007. The estimated density increased from 1,132 plants/acre (2,802 plants/ha) in 1983 to 3,000 plants/acre (7,426 plants/ha) by 1997, and decreased to 2,200 plants/acre (5,446 plants/ha) by 2007. Few or no seedlings have been measured in any sample year. Young plants comprised 41% of the population in 1983 and 23% in 1997, but have not been abundant in other years. Decadence has ranged from 0% of the population in 1983 to 33% in 1989. In 2007, 24% of the population was decadent. There have been few dead or dying plants. The proportion of the population displaying poor vigor peaked in 2002 at 35%, and was likely a result of drought. Browse use has been consistently light-moderate. Other browse sampled on the site include Oregon grape (*Mahonia repens*), Martin ceanothus (*Ceanothus martinii*), stickyleaf low rabbitbrush (*Chrysothamnus viscidiflorus* ssp. *viscidiflorus*), and pricklypear cactus (*Opuntia* sp.).

Herbaceous Understory

The herbaceous understory was abundant and diverse prior to 2002. The drought in 2002 is suspected to have caused a decline in cover and frequency of both grasses and forbs. With the exception of 2007, perennial grasses were more abundant than annual grasses. Perennial grass cover was 8% in 1997, 6% in 2002, and 4% in 2007. The common perennial grasses include bluebunch wheatgrass (*Agropyron spicatum*), mutton bluegrass (*Poa fendleriana*), mountain brome (*Bromus carinatus*), and bottlebrush squirreltail (*Sitanion hystrix*). Cheatgrass (*Bromus tectorum*) frequency and cover have fluctuated since 1997. Cheatgrass cover was 2% in 1997, 0% in 2002, and 14% in 2007. It appears from photographic comparisons that cheatgrass was much more abundant prior to 1997, but since annuals were not sampled in 1983 or 1989, no comparisons can be made.

The forb component was abundant and diverse in 1983-1997. During sampling in 2002, it was observed that most forbs were dessicated and unrecognizable. Perennial forb cover decreased from 14% in 1997 to 1% in 2002, then increased to 8% in 2007. Prior to the drought in 2002, the most abundant perennial forbs included wild onion (*Allium* sp.), longleaf phlox (*Phlox longifolia*), tapertip hawksbeard (*Crepis acuminata*), gray lomatium (*Lomatium grayi*), and tailcup lupine (*Lupinus caudatus*). Annual forb cover also decreased from 5% in 1997 to nearly 0% in 2002, then increased to 10% in 2007. The most common annual forb species were pale alyssum (*Alyssum alyssoides*), slenderleaf collomia (*Collomia linearis*), and blue-eyed Mary (*Collinsia parviflora*).

1989 TREND ASSESSMENT

The browse trend is up. The density of serviceberry and sagebrush increased by 64% and 50%, respectively. Decadency increased for both browse species, but none of the browse population was classified as dying. There was an increase in the number of young serviceberry and sagebrush. Plants exhibiting poor vigor remained low for serviceberry but increased to 56% of the sagebrush population. The grass trend was slightly up. The sum of nested frequency for perennial grasses increased 12%. However, there was a significant decrease in nested frequency of bottlebrush squirreltail. The forb trend is down. The sum of nested frequency of perennial grasses decreased 39%, and the number of species decreased from 23 to 16.

browse - up (+2) grass - slightly up (+1) forb - down (-2)

1997 TREND ASSESSMENT

The browse trend is slightly down. Densities of serviceberry and sagebrush, decreased by 47% and 72%, respectively. Some of the change in browse density is attributed to the larger sample area that was measured beginning in 1997. The number of young plants also decreased for serviceberry and sagebrush. Decadence declined for both browse species. The density of dead sagebrush plants was higher than the density of live plants. Fewer key browse plants exhibited poor vigor. Browse use on sagebrush improved to light and remained light-moderate for serviceberry. The grass trend is stable. The sum of nested frequency of perennial grasses changed little, decreasing 9%. There was a significant increase in the nested frequency of Sandberg bluegrass (*Poa secunda*). The forb trend is slightly up. The sum of nested frequency of perennial forbs increased 17% and the number of species increased to 29. There was a significant increase in the nested frequency of wild onion, and a significant decrease in that of dandelion (*Taraxacum officinale*). The Desirable Components Index (DCI) score was not calculated for this summer range site.

winter range condition (DCI) - Not applicable, summer range
browse - slightly down (-1) grass - stable (0) forb - slightly up (+1)

2002 TREND ASSESSMENT

The browse trend is stable. The density of serviceberry and sagebrush increased 9% and 53%, respectively. Even though the density of these species increased, the density and cover remained low. Decadence was stable for serviceberry, but increased from 12% of the population to 19% for sagebrush. There were no seedlings or young plants of preferred browse species. In addition, it was noted that seed and flower production was low on serviceberry and sagebrush. The proportion of serviceberry plants exhibiting poor vigor increased to 49%, but remained stable for sagebrush. Browse use on serviceberry shifted from light-moderate to heavy, and was mostly light on sagebrush. The grass trend is stable. Although the sum of nested frequency for perennial grasses decreased by another 8%, there was a 97% decrease in cheatgrass frequency. Bluebunch wheatgrass was the only perennial grass to increase in either frequency or cover, and the increase was significant. The nested frequency of Mutton bluegrass and Sandberg bluegrass decreased significantly. Grasses had been heavily grazed. The forb trend is down. The sum of nested frequency of perennial forbs decreased 89% and cover decreased from 14% to 1%. The number of forb species decreased from 29 to 11. The DCI score was not calculated for this summer range site.

winter range condition (DCI) - Not applicable, summer range
browse - stable (0) grass - stable (0) forb - down (-2)

2007 TREND ASSESSMENT

The browse trend is stable. The density of serviceberry decreased 31%, but the density of sagebrush increased 19%. There were no seedling or young serviceberry plants. Conversely, there were 140 sagebrush seedlings/acre (347 seedlings/ha) and 220 young sagebrush/acre (545 young/ha). The increase of sagebrush reproduction and recruitment buffered against a down or slightly down browse trend. Decadence decreased for serviceberry and sagebrush. Vigor was good for both species. Browse use remained light-moderate for sagebrush and decreased from heavy to moderate-heavy for serviceberry. The grass trend is down. The sum of nested frequency of perennial grasses decreased 32%, which included a significant decrease in bluebunch wheatgrass. There was a significant increase in the nested frequency of cheatgrass. Cheatgrass cover increased from 0% to 14% of the total ground cover. The forb trend is up. There was a four-fold increase in the sum of nested frequency of perennial forbs. Bur buttercup (*Ranunculus testiculatus*), an allelopathic annual (Buchanan et al. 1978), was measured for the first time in one quadrat. The DCI score was not calculated for this summer range site.

winter range condition (DCI) - Not applicable, summer range
browse - stable (0) grass - down (-2) forb - up (+2)

HERBACEOUS TRENDS --
Management unit 19B, Study no: 2

Type	Species	Nested Frequency					Average Cover %		
		'83	'89	'97	'02	'07	'97	'02	'07
G	Agropyron spicatum	a31	a49	a60	b144	a55	1.86	4.98	1.95
G	Agropyron trachycaulum	a3	a9	-	-	a1	-	-	.15
G	Bromus carinatus	ab41	b72	ab49	a32	a23	1.17	.66	.20
G	Bromus tectorum (a)	-	-	b187	a5	c246	1.71	.01	13.76
G	Festuca myuros (a)	-	-	-	-	3	-	-	.03
G	Melica bulbosa	a3	-	a8	-	a2	.26	-	.01
G	Poa fendleriana	c78	c78	bc50	a17	ab38	2.99	.53	1.30
G	Poa secunda	-	a9	b28	a5	ab17	.66	.03	.22
G	Sitanion hystrix	c58	b27	ab25	ab7	a3	.65	.04	.03
G	Stipa lettermani	a3	-	a3	a-	-	.03	.00	-
Total for Annual Grasses		0	0	187	5	249	1.71	0.01	13.79
Total for Perennial Grasses		217	244	223	205	139	7.62	6.26	3.88
Total for Grasses		217	244	410	210	388	9.33	6.28	17.67
F	Achillea millefolium	1	-	-	-	-	-	-	-
F	Agoseris glauca	ab12	-	b26	ab5	a3	.47	.03	.03
F	Alyssum alyssoides (a)	-	a21	b249	a3	b236	4.31	.01	2.94
F	Allium sp.	d182	b70	c100	-	a4	.45	-	.04
F	Aster sp.	-	a1	a4	-	-	.36	-	-
F	Astragalus sp.	-	-	7	-	-	.06	-	-
F	Astragalus utahensis	3	-	-	-	-	-	-	-
F	Balsamorhiza sagittata	a10	a17	a10	a11	a8	.82	.54	.43
F	Camelina microcarpa (a)	-	-	11	-	-	.02	-	-
F	Chaenactis douglasii	3	-	-	-	-	-	-	-
F	Cirsium neomexicanum	a9	a8	a3	a2	a3	.21	.03	.00
F	Collomia linearis (a)	-	-	b88	-	a8	.38	-	.04
F	Comandra pallida	c81	b43	ab29	ab24	a13	.35	.18	.13
F	Collinsia parviflora (a)	-	-	b32	a1	c227	.06	.00	2.99
F	Crepis acuminata	b63	b59	b50	a3	a5	1.20	.03	.06
F	Cryptantha sp.	4	-	-	-	-	-	-	-
F	Delphinium nuttallianum	a12	-	a21	-	-	.15	-	-
F	Descurainia pinnata (a)	-	-	-	-	25	-	-	.70
F	Epilobium brachycarpum (a)	-	-	ab15	b22	a4	.06	.12	.03
F	Epilobium sp.	-	-	-	-	7	-	-	.18
F	Eriogonum racemosum	b17	ab9	a3	-	-	.15	-	-

Type	Species	Nested Frequency					Average Cover %		
		'83	'89	'97	'02	'07	'97	'02	'07
F	Hackelia patens	$_{a}$11	$_{a}$10	-	-	$_{a}$9	-	-	.06
F	Heuchera parvifolia	1	-	-	-	-	-	-	-
F	Helianthella uniflora	3	-	-	-	-	-	-	-
F	Hymenoxys acaulis	-	-	45	-	-	4.65	-	-
F	Hydrophyllum capitatum	$_{a}$87	-	-	-	$_{a}$79	-	-	5.13
F	Lathyrus brachycalyx	$_{a}$8	-	-	$_{a}$3	-	-	.00	-
F	Lappula occidentalis (a)	-	-	-	-	16	-	-	.09
F	Lactuca serriola	-	-	-	-	1	-	-	.03
F	Lithospermum ruderale	$_{b}$9	$_{a}$1	$_{ab}$3	$_{ab}$4	$_{ab}$6	.15	.18	.68
F	Lomatium grayi	$_{b}$52	$_{b}$30	$_{b}$49	-	$_{a}$7	1.50	-	.12
F	Lupinus caudatus	$_{b}$78	$_{b}$72	$_{ab}$44	-	$_{a}$37	1.74	-	.89
F	Machaeranthera canescens	$_{a}$1	-	$_{a}$1	-	-	.03	-	-
F	Microsteris gracilis (a)	-	-	$_{a}$24	-	$_{b}$177	.14	-	3.23
F	Penstemon sp.	-	-	5	-	-	.01	-	-
F	Phlox longifolia	$_{a}$29	$_{a}$43	$_{a}$56	-	$_{a}$29	.63	-	.38
F	Polygonum douglasii (a)	-	-	$_{b}$21	-	$_{a}$2	.10	-	.00
F	Ranunculus testiculatus (a)	-	-	-	-	2	-	-	.00
F	Senecio integerrimus	-	$_{a}$9	$_{a}$5	-	$_{a}$1	.18	-	.00
F	Taraxacum officinale	-	$_{b}$21	$_{a}$5	-	$_{a}$5	.12	-	.06
F	Tragopogon dubius	$_{b}$20	$_{b}$30	$_{ab}$17	-	$_{a}$1	.07	-	.00
F	Unknown forb-perennial	-	-	-	1	-	-	.00	-
F	Wyethia amplexicaulis	-	-	5	-	-	.15	-	-
F	Zigadenus paniculatus	-	-	8	-	-	.02	-	-
Total for Annual Forbs		0	21	440	26	697	5.08	0.14	10.06
Total for Perennial Forbs		696	423	496	53	218	13.54	1.01	8.27
Total for Forbs		696	444	936	79	915	18.62	1.15	18.33

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

BROWSE TRENDS --
Management unit 19B, Study no: 2

Type	Species	Strip Frequency			Average Cover %		
		'97	'02	'07	'97	'02	'07
B	Amelanchier alnifolia	22	24	20	5.56	4.55	4.51
B	Artemisia tridentata vaseyana	13	19	22	2.57	3.16	3.76
B	Ceanothus martinii	7	10	1	.33	.56	-
B	Chrysothamnus viscidiflorus viscidiflorus	5	5	4	.93	.33	.15
B	Juniperus osteosperma	1	0	0	-	-	-
B	Mahonia repens	25	18	23	2.66	.51	1.50
B	Opuntia sp.	6	5	1	.15	.15	-
B	Symphoricarpos oreophilus	66	66	53	15.70	14.43	10.87
Total for Browse		145	147	124	27.91	23.71	20.80

CANOPY COVER, LINE INTERCEPT --
Management unit 19B, Study no: 2

Species	Percent Cover	
	'02	'07
Amelanchier alnifolia	8.03	10.81
Artemisia tridentata vaseyana	3.31	5.16
Ceanothus martinii	.41	-
Chrysothamnus viscidiflorus viscidiflorus	.30	.36
Mahonia repens	.66	1.14
Symphoricarpos oreophilus	18.39	18.18

KEY BROWSE ANNUAL LEADER GROWTH --
Management unit 19B, Study no: 2

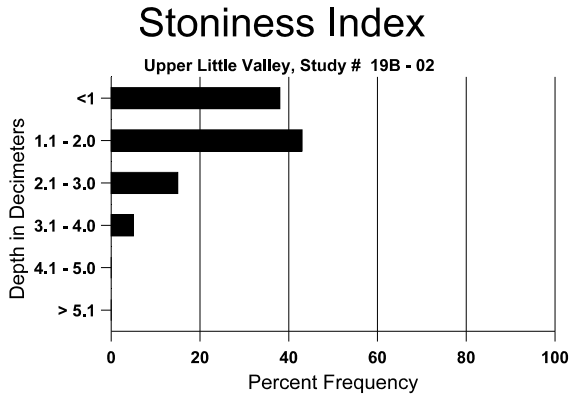
Species	Average leader growth (in)	
	'02	'07
Amelanchier alnifolia	-	2.6
Artemisia tridentata vaseyana	1.6	1.7

BASIC COVER --
Management unit 19B, Study no: 2

Cover Type	Average Cover %				
	'83	'89	'97	'02	'07
Vegetation	4.75	10.25	50.93	27.84	57.93
Rock	5.50	9.25	6.74	10.16	9.20
Pavement	3.25	3.25	1.85	10.75	9.21
Litter	71.50	63.50	53.03	38.76	18.77
Cryptogams	0	0	.03	0	0
Bare Ground	15.00	13.75	8.91	32.10	13.53

SOIL ANALYSIS DATA --
Herd Unit 19B, Study no: 2, Upper Little Valley

Effective rooting depth (in)	Temp °F (depth)	pH	Sandy clay loam			%0M	ppm P	ppm K	dS/m
			%sand	%silt	%clay				
11.8	59.5 (13.8)	6.2	49.3	27.2	23.6	4.6	13.7	211.2	.6



PELLET GROUP DATA --
Management unit 19B, Study no: 2

Type	Quadrat Frequency		
	'97	'02	'07
Rabbit	3	-	1
Elk	2	-	10
Deer	26	21	18
Cattle	-	1	-

Days use per acre (ha)	
'02	'07
-	-
2 (5)	15 (36)
42 (104)	38 (93)
9 (21)	2 (4)

BROWSE CHARACTERISTICS --
Management unit 19B, Study no: 2

		Age class distribution (plants per acre)					Utilization					
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Amelanchier alnifolia												
83	**733**	-	-	600	133	-	64	36	18	9	9	27/27
89	**1199**	-	533	400	266	-	28	22	22	-	6	32/30
97	**640**	-	40	580	20	20	50	13	3	3	3	53/55
02	**700**	-	-	700	-	40	0	97	0	-	49	42/42
07	**480**	-	-	480	-	20	46	50	0	-	0	51/59
Artemisia tridentata vaseyana												
83	**800**	-	-	800	-	-	42	8	0	-	0	21/31
89	**1198**	-	66	866	266	-	22	0	22	-	56	20/25
97	**340**	-	-	300	40	380	0	0	12	6	6	26/43
02	**520**	-	-	420	100	220	15	8	19	4	4	22/40
07	**620**	140	220	340	60	100	13	13	10	10	10	23/44
Ceanothus martinii												
83	**732**	-	466	266	-	-	100	0	-	-	0	7/11
89	**733**	-	-	733	-	-	27	0	-	-	0	8/11
97	**300**	40	80	220	-	-	33	0	-	-	0	8/27
02	**340**	-	20	320	-	40	0	88	-	-	0	4/11
07	**40**	-	-	40	-	-	0	100	-	-	0	5/7
Chrysothamnus nauseosus albicaulis												
83	**0**	-	-	-	-	-	0	0	-	-	0	-/-
89	**0**	-	-	-	-	-	0	0	-	-	0	-/-
97	**0**	-	-	-	-	-	0	0	-	-	0	-/-
02	**0**	-	-	-	-	-	0	0	-	-	0	24/39
07	**0**	-	-	-	-	-	0	0	-	-	0	-/-
Chrysothamnus viscidiflorus viscidiflorus												
83	**199**	-	66	133	-	-	0	0	0	-	0	11/13
89	**333**	-	133	200	-	-	0	0	0	-	0	13/19
97	**180**	-	-	180	-	-	0	0	0	-	0	15/32
02	**180**	-	-	20	160	-	0	11	89	44	44	9/18
07	**180**	-	-	160	20	-	0	0	11	11	11	11/20

		Age class distribution (plants per acre)					Utilization					
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Juniperus osteosperma												
83	**0**	-	-	-	-	-	0	0	-	-	0	-/-
89	**0**	-	-	-	-	-	0	0	-	-	0	-/-
97	**40**	-	-	40	-	-	0	0	-	-	0	-/-
02	**0**	-	-	-	-	-	0	0	-	-	0	-/-
07	**0**	-	-	-	-	-	0	0	-	-	0	-/-
Mahonia repens												
83	**533**	-	-	533	-	-	0	0	0	-	0	5/7
89	**1265**	-	133	1066	66	-	0	0	5	-	0	2/5
97	**7560**	-	1640	5920	-	-	0	0	0	-	0	5/7
02	**1560**	-	-	840	720	160	0	0	46	46	46	4/5
07	**8700**	-	-	8700	-	-	.22	0	0	-	0	3/5
Opuntia sp.												
83	**600**	-	-	600	-	-	0	0	0	-	0	6/13
89	**732**	-	133	533	66	-	0	0	9	-	0	8/22
97	**180**	-	40	140	-	20	0	0	0	-	22	6/11
02	**100**	-	-	100	-	-	0	0	0	-	0	5/13
07	**20**	-	-	20	-	-	0	0	0	-	0	6/13
Pachistima myrsinites												
83	**532**	-	66	466	-	-	0	0	-	-	0	5/4
89	**799**	-	333	466	-	-	0	25	-	-	0	2/2
97	**0**	-	-	-	-	-	0	0	-	-	0	-/-
02	**0**	-	-	-	-	-	0	0	-	-	0	-/-
07	**0**	-	-	-	-	-	0	0	-	-	0	-/-
Symphoricarpos oreophilus												
83	**1132**	-	466	666	-	-	12	0	0	-	0	19/15
89	**1599**	-	133	933	533	-	29	0	33	-	13	19/22
97	**3000**	40	700	1840	460	100	25	7	15	9	11	25/45
02	**2880**	-	-	2480	400	40	0	.69	14	3	35	21/36
07	**2200**	-	60	1620	520	40	21	3	24	5	8	19/33
Tetradymia canescens												
83	**0**	-	-	-	-	-	0	0	-	-	0	-/-
89	**0**	-	-	-	-	-	0	0	-	-	0	-/-
97	**0**	-	-	-	-	-	0	0	-	-	0	19/38
02	**0**	-	-	-	-	-	0	0	-	-	0	-/-
07	**0**	-	-	-	-	-	0	0	-	-	0	-/-