

Trend Study 21B-8-08

Study site name: Smiths Ridge .

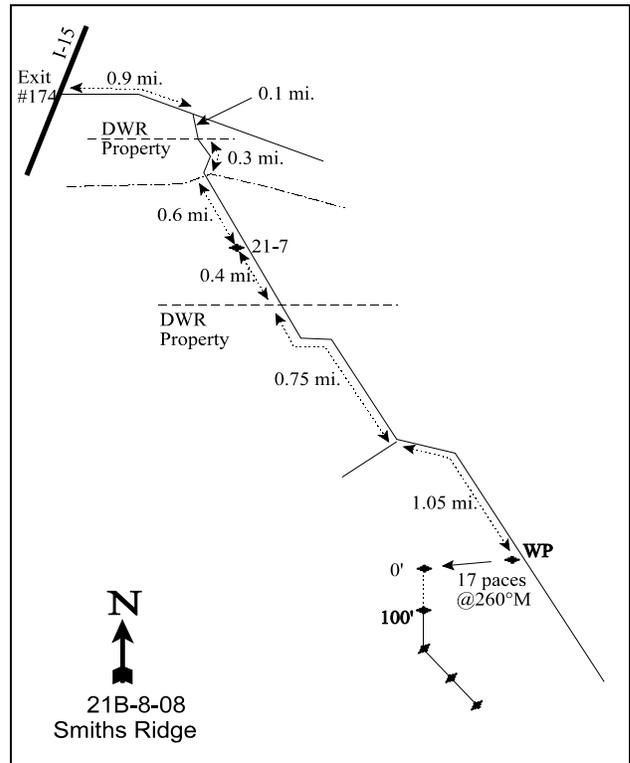
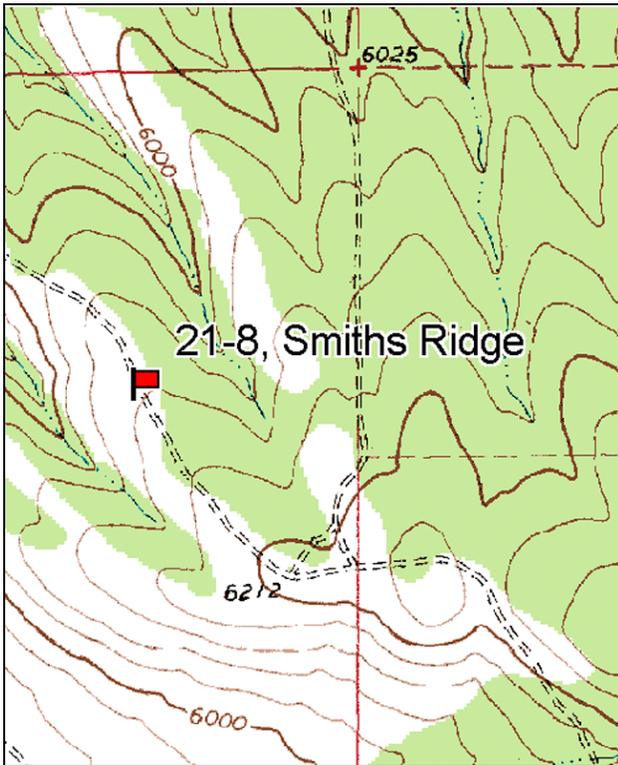
Vegetation type: Mtn. Brush Burn .

Compass bearing: frequency baseline 170 degrees magnetic.

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

LOCATION DESCRIPTION

From exit #174 on I-15 south of Holden, proceed to the east side of the freeway, then east on the Maple Canyon Road for 0.9 miles to a cattleguard. Just beyond the cattleguard, turn right and go 0.1 miles to DWR property. Proceed 0.3 miles across a wash and to a 3-way split in the road. Stay left and go 0.6 miles to the Bennett Field transect (21-7). From there, continue 0.4 miles to a gate at the eastern boundary of DWR property. Go another 0.75 miles through 2 more gates to a two track road. Turn left and go 1.05 miles to the witness post. From the witness post walk 17 paces at 260 degrees magnetic. The frequency baseline starts 100 feet due west of the cliffrose. The 0' stake is a 3 foot rebar with a browse tag #7072 attached.



Map Name: Coffee Peak

Diagrammatic Sketch

Township 20S, Range 23W, Section 30

GPS: NAD 83, UTM 12S 393805 E, 4322630 N

DISCUSSION

Smiths Ridge - Trend Study No. 21B-8

Study Information

This study is located on the foothills of the Pahvant Range [elevation: 6,120 feet (1,865 m), slope: 8%-10%, aspect: west]. This area is part of the extensive chainings completed by the DWR in the late 1950s and early 1960s. A large area surrounding the site burned in August 2000 in the Swain fire. The burned areas were later seeded and chained. Most of the transect itself was not chained although it burned. The chaining treatment went around patches of unburned juniper trees that were in the immediate vicinity of the transect. In the past, herbaceous vegetation was often depleted by heavy early-season cattle grazing. AUMs were reduced from 143 in 1977 to 124 in 1984. Livestock use on the study was minimal in 1998, and was estimated at 2 cattle days use/acre (4 cdu/ha) in 2003 and 12 cattle days use/acre (29 cdu/ha) in 2008. Winter deer use has been moderate.. The DWR Upper Smith pellet transect, which is located nearby, estimated an average of 63 deer days use/acre (156 ddu/ha) between 1981 and 1985. Between 1986 and 1991, average deer days use/acre decreased to 43 (106 ddu/ha) (Jense et al 1991). Pellet group data collected on the study estimated 70 deer days use/acre (173 ddu/ha) in 1998, 90 days use/acre (222 ddu/ha) in 2003, and 140 days use/acre (346 ddu/ha) in 2008. Elk use was estimated at 28 days use/acre (69 edu/ha) in 1998, 12 days use/acre (30 edu/ha) in 2003, and 3 days use/acre (8 edu/ha) in 2008.

Soil

The soil is classified as a Borvant-Pahvant complex (USDA-NRCS 2008). The Borvant series consists of well-drained soils that are shallow over a petrocalcic horizon. These soils formed in alluvium or colluvium derived from limestone and sandstone. The Pahvant series consists of well-drained soils that are shallow to a calcium carbonate cemented hardpan. The soil on the study is a sandy loam with a moderately acidic reaction (pH 5.7). The soil is very rocky throughout the profile, however, relative combined rock and pavement cover has been low at 10%-14% since 1998. Relative combined vegetation and litter cover has been 71%-77% since 1998, and relative bare ground cover has been 9%-15%. The soil erosion condition was classified as stable in 2003 and 2008.

Browse

Prior to the Swain fire in 2000, the preferred browse species on the study included Stansbury cliffrose (*Cowania mexicana stansburiana*), antelope bitterbrush (*Purshia tridentata*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), and low densities of Gambel oak (*Quercus gambelii*). The cliffrose and bitterbrush were reported to be hybridizing in 1985, which is commonly observed in the Holden area. Forage kochia (*Kochia prostrata*) was seeded after the burn and was sampled in 2003 and 2008.

Stansbury cliffrose canopy cover increased from less than 1% in 1998 to 2% in 2008. Density decreased from 220 plants/acre in 1998 to 60 plants/acre in 2003, then increased to 80 plants/acre in 2008. Decadence has varied from 0% of the population to 50%. Young plants were only sampled in 1998 and 2008 at 18% and 25% of the population, respectively. No cliffrose plants displayed poor vigor until 2008 when 25% of the population displayed poor vigor. Browse use was mostly moderate from 1985 to 1998, moderate-heavy in 2003, and light in 2008. Average annual leader growth was 2.6 inches (6.6 cm) in 2003.

Antelope bitterbrush quadrat cover decreased from 9% in 1998 to 1% in 2003 and almost 0% in 2008. Density decreased from 600 plants/acre in 1998 to 60 plants/acre in 2003, and increased to 240 plants/acre in 2008. Decadence increased from 12% of the population in 1985 to 50% in 1991, decreased to 0% in 1998 and 2003, then increased to 33% in 2008. Young plants comprised 25% of the population in 1985, 3% in 1998, and 67% in 2008. The population was largely vigorous, although 25% of the plants sampled in 1991 displayed poor vigor.

Mountain big sagebrush provided 6% cover in 1998, 1% in 2003, and 2% in 2008. Density fell from 2,040 plants/acre in 1998 to 1,400 plants/acre. Decadence steadily decreased from 60% of the population in 1985 to 3% by 2008. Young recruitment has fluctuated between 10% and 61% of the population since 1985. Plants displaying poor vigor comprised 10%-13% of the population from 1985 to 1998, then decreased to 1%-3% in 2003 and 2008. Average annual leader growth was 2.6 inches (6.7 cm) in 2008.

Forage kochia provided 2% quadrat cover in 2003 and 2008. Density increased from 4,020 plants/acre in 2003 to 6,000 plants/acre in 2008. The population was comprised entirely of young and mature plants in 2003, and 3% of the sampled plants were decadent in 2008. Plant vigor was excellent in both years.

Utah juniper (*Juniperus osteosperma*) provided 15% canopy cover in 1998, 9% in 2003, and 12% in 2008. Point-centered quarter data estimated juniper density to be 26 trees/acre in 2003 and 33 trees/acre in 2008. Average trunk diameter was 12 inches (31 cm) in 2003 and 13 inches (34 cm) in 2008. The majority of the sampled trees were greater than 8 feet (2.4 m) in 2003 and 2008.

Herbaceous Understory

Prior to the burn and subsequent seeding treatment, grass diversity was low. Five grass species were sampled, including bluebunch wheatgrass (*Agropyron spicatum*), Sandberg bluegrass (*Poa secunda*), bottlebrush squirreltail (*Sitanion hystrix*), bulbous bluegrass (*Poa bulbosa*), and cheatgrass (*Bromus tectorum*). Diversity increased slightly after the seeding, with six and eight perennial species sampled in 2003 and 2008, respectively. Intermediate wheatgrass (*Agropyron intermedium*), sheep fescue (*Festuca ovina*), and mutton bluegrass (*Poa fendleriana*) were among the species sampled in 2003 and 2008, although they provided little cover. Cheatgrass was the most abundant grass, providing 9% cover in 1998, 11% in 2003, and 6% in 2008. It was sampled in at least 90% of the quadrats each year since 1998.

Forbs are sparse, and most provide little cover. Fourteen forb species were seeded (Table 1), but only five were sampled in 2003, including yarrow (*Achillea millefolium*), alfalfa (*Medicago sativa*), and small burnet (*Sanguisorba minor*). Diversity increased slightly after the burn and seeding, from five perennials sampled in 1998 to nine in 2003, however, by 2008, only one perennial species was sampled. Storksbill (*Erodium cicutarium*) is the most abundant forb, providing 9% cover in 2003 and 2% in 2008.

1991 TREND ASSESSMENT

The trend for browse is slightly down. Cliffrose density decreased 20%, and decadence increased from 20% of the population to 50%. Bitterbrush density decreased 50%, and decadence increased from 12% of the population to 50%. Young recruitment decreased from 25% of the population to 0%. Sagebrush density increased 15%, and decadence decreased from 60% to 30%. Young recruitment increased from 10% of the population to 39%. The trend for grass is up. The sum of nested frequency for perennial grasses increased almost two-fold. Sandberg bluegrass increased significantly in nested frequency. The trend for forbs is slightly up. The sum of nested frequency for perennial forbs increased slightly. The number of species sampled also increased from two to six.

browse - slightly down (-1)

grass - up (+2)

forb - slightly up (+1)

1998 TREND ASSESSMENT

The trend for browse is slightly up. Density changes may have been related to the larger sample area in 1998, therefore, the trend was determined using other parameters. Cliffrose decadence decreased from 50% to 0%, and young recruitment increased from 0% to 18%. Vigor remained excellent. Bitterbrush decadence decreased from 50% to 0%, and young recruitment increased slightly from 0% to 3%. Vigor improved from 25% of the population showing poor vigor to all of the plants being vigorous. Sagebrush decadence continued to decrease from 30% of the population to 14%, but young recruitment also decreased from 39% of the population to 14%. Plant vigor remained stable, with 12% of the population exhibiting poor vigor. The trend

for grass is up. The sum of nested frequency for perennial grasses increased 44%, and bottlebrush squirreltail increased significantly in nested frequency. The trend for forbs is slightly down. The sum of nested frequency for perennial forbs decreased slightly. The winter range condition, determined by the Desirable Components Index (DCI), was rated as fair due to high preferred browse cover with low decadence and low recruitment, high perennial grass cover, and perennial forb cover.

winter range condition (DCI) - fair (58) Mid-level potential scale

browse - slightly up (+1)

grass - up (+2)

forb - slightly down (-1)

2003 TREND ASSESSMENT

The trend for browse is stable. Cliffrose density decreased 73% after the fire. Decadence increased from 0% of the population to 33%, and no young plants were sampled. Bitterbrush density decreased 90%, and all of the sampled plants were mature. Sagebrush density decreased 29%, and decadence decreased from 14% of the population to 8%. Young plants increased from 14% of the population to 61% following the seeding, and vigor improved from 12% of the population showing poor vigor to 3%. Kochia was sampled at a density of 4,020 plants/acre. The population was 46% young and 54% mature. The trend for grass is slightly down. The sum of nested frequency for perennial grasses decreased 22%. Poa bulbosa increased significantly in nested frequency, while cheatgrass decreased significantly in nested frequency. The trend for forbs is stable. Although the sum of nested frequency for perennial forbs increased, storksbill nested frequency also increased significantly. Seeded forbs were sampled in very low frequencies. The DCI rating decreased to poor due to decreases in preferred browse and perennial grass cover and an increase in cheatgrass cover.

winter range condition (DCI) - poor (45) Mid-level potential scale

browse - stable (0)

grass - slightly down (-1)

forb - stable (0)

2008 TREND ASSESSMENT

The trend for browse is stable. Cliffrose density changed little, and decadence increased slightly from 33% of the population to 50%. Young recruitment increased from 0% of the population to 25%. Bitterbrush density increased substantially, but decadence also increased from 0% of the population to 33%. Young recruitment increased from 0% of the population to 67%. Sagebrush density remained relatively stable, and decadence decreased from 8% of the population to 3%. Young recruitment also decreased, but remained high at 27% of the population. Sagebrush vigor remained excellent. Kochia density increased almost 50%. The population was 35% young and 62% mature, and vigor remained excellent. The trend for grass is slightly up. The sum of nested frequency for perennial forbs increased 28%. Intermediate wheatgrass increased significantly in nested frequency, and bulbous bluegrass decreased significantly in nested frequency. The trend for forbs is down. Few perennial forbs are present. Pale alyssum (*Alyssum alyssoides*) increased significantly in nested frequency, while storksbill decreased significantly in nested frequency. The DCI rating remained poor.

winter range condition (DCI) - poor (47) Mid-level potential scale

browse - stable (0)

grass - slightly up (+1)

forb - down (-2)

Table 1. Seed mix applied to Swain Fire in 2001.

Seed Species	Pounds in Percent of	
	Mix	Mix
Crested Wheatgrass 'Douglas'	373	1
Crested Wheatgrass 'Ephraim'	100	1
Streambank Wheatgrass 'Sodar'	1950	4
Western Wheatgrass 'Rosana'	2950	6
Bluebunch Wheatgrass 'Goldar'	2350	5
Bluebunch Wheatgrass	178	1
Slender Wheatgrass 'San Luis'	500	1
Orchardgrass 'Potomac'	3618	8
Orchardgrass 'Paiute'	1765	4
Intermediate Wheatgrass 'Oahe'	550	1
Great Basin Wildrye 'Trailhead'	977	2
Sheep Fescue	1000	2
Hard Fescue 'Durar'	1675	4
Big Bluegrass 'Sherman'	497	1
Sandberg Bluegrass 'Canbar'	250	1
Western Yarrow	465	1
Cicer Milkvetch	455	1
Rocky Mountain Beeplant	409	1
Lewis Blue Flax	350	1
Yellow Sweetclover	603	1
Alfalfa 'Rangelander'	1300	3
Alfalfa 'Ladak'	1550	3
Alfalfa 'Nomad'	1800	4
Sainfoin VNS	7696	17
Sainfoin 'Remont'	493	1
White Dutch Clover	252	1
Strawberry Clover	366	1
Mammoth Red Clover	229	1
Medium Red Clover	81	1
Red Clover	350	1
Small Burnet 'Delar'	2875	6
Sunflower	250	1
Basin Big Sagebrush	2002	4
Mountain Big Sagebrush	1000	2
Wyoming Sagebrush	2380	5
Rabbitbrush	748	2
Forage Kochia 'Immigrant'	1000	2
Fourwing Saltbush	150	1
Total	45,537	

HERBACEOUS TRENDS --
Management unit 21B, Study no: 8

Type	Species	Nested Frequency					Average Cover %		
		'85	'91	'98	'03	'08	'98	'03	'08
G	<i>Agropyron intermedium</i>	a-	a-	a-	a6	b27	-	.24	1.58
G	<i>Agropyron spicatum</i>	a21	ab61	b97	ab56	b78	4.71	3.84	3.67
G	<i>Bromus japonicus</i> (a)	-	-	-	3	5	-	.60	.01
G	<i>Bromus tectorum</i> (a)	-	-	b304	a262	a277	9.32	11.38	6.44
G	<i>Festuca ovina</i>	-	-	-	2	1	-	.03	.03
G	<i>Poa bulbosa</i>	a-	a1	a14	b50	a16	.48	2.43	.29
G	<i>Poa canbyi</i>	-	-	-	-	3	-	-	.00
G	<i>Poa fendleriana</i>	a-	a-	a-	a-	b23	-	-	.22
G	<i>Poa secunda</i>	a72	b119	b138	ab105	ab121	2.62	1.77	2.54
G	<i>Sitanion hystrix</i>	a13	ab23	c57	c59	cb39	1.20	1.81	.99
Total for Annual Grasses		0	0	304	265	282	9.32	11.98	6.46
Total for Perennial Grasses		106	204	306	278	308	9.02	10.14	9.34
Total for Grasses		106	204	610	543	590	18.35	22.13	15.80
F	<i>Achillea millefolium</i>	-	-	-	3	-	-	.06	-
F	<i>Agoseris glauca</i>	a-	b16	a-	ab6	a-	-	.04	-
F	<i>Alyssum alyssoides</i> (a)	-	-	b60	a1	c180	.28	.00	.92
F	<i>Arabis</i> sp.	-	9	7	-	-	.09	-	-
F	<i>Astragalus</i> sp.	-	-	3	-	-	.00	-	-
F	<i>Calochortus nuttallii</i>	-	4	2	1	-	.00	.00	-
F	<i>Chaenactis douglasii</i>	b24	a-	a-	a-	a-	-	-	-
F	<i>Cirsium</i> sp.	-	-	-	-	-	-	.00	-
F	<i>Collinsia parviflora</i> (a)	-	-	-	-	3	-	-	.00
F	<i>Erodium cicutarium</i> (a)	-	-	a4	c163	b107	.06	9.48	2.33
F	<i>Helianthus annuus</i> (a)	-	-	-	1	-	-	.03	-
F	<i>Hedysarum boreale</i>	-	-	-	2	-	-	.03	-
F	<i>Lactuca serriola</i>	-	9	-	3	-	-	.00	-
F	<i>Linum lewisii</i>	-	-	8	3	-	.04	.01	-
F	<i>Lomatium</i> sp.	a-	b13	a-	b14	a-	-	.10	-
F	<i>Medicago sativa</i>	a-	a-	a-	b15	a-	-	1.37	-
F	<i>Microsteris gracilis</i> (a)	-	-	-	1	-	-	.00	-
F	<i>Ranunculus testiculatus</i> (a)	-	-	12	-	4	.04	-	.00
F	<i>Sanguisorba minor</i>	-	-	-	3	-	-	.09	-
F	<i>Tragopogon dubius</i>	-	-	3	-	2	.00	-	.15
F	<i>Zigadenus paniculatus</i>	4	2	-	-	-	-	.00	-

T y p e	Species	Nested Frequency					Average Cover %		
		'85	'91	'98	'03	'08	'98	'03	'08
	Total for Annual Forbs	0	0	76	166	294	0.39	9.52	3.26
	Total for Perennial Forbs	28	53	23	50	2	0.14	1.74	0.15
	Total for Forbs	28	53	99	216	296	0.54	11.26	3.42

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

BROWSE TRENDS --

Management unit 21B, Study no: 8

T y p e	Species	Strip Frequency			Average Cover %		
		'98	'03	'08	'98	'03	'08
B	<i>Artemisia tridentata vaseyana</i>	55	38	35	6.17	1.01	2.32
B	<i>Chrysothamnus nauseosus hololeucus</i>	0	3	0	-	.00	-
B	<i>Cowania mexicana stansburiana</i>	8	3	3	5.19	1.16	1.41
B	<i>Gutierrezia sarothrae</i>	41	41	29	1.73	1.54	.53
B	<i>Juniperus osteosperma</i>	5	4	2	5.94	5.33	5.23
B	<i>Kochia prostrata</i>	0	45	55	-	2.04	1.81
B	<i>Opuntia sp.</i>	1	3	3	.00	.03	.06
B	<i>Purshia tridentata</i>	18	2	3	8.60	1.29	.18
B	<i>Quercus gambelii</i>	0	1	1	.53	.00	.03
B	<i>Rhus glabra cismontana</i>	3	0	0	.00	-	-
B	<i>Ribes sp.</i>	1	0	0	.00	-	-
	Total for Browse	132	140	131	28.19	12.42	11.58

CANOPY COVER, LINE INTERCEPT --
 Management unit 21B, Study no: 8

Species	Percent Cover		
	'98	'03	'08
Artemisia tridentata vaseyana	-	.83	3.20
Cowania mexicana stansburiana	.80	1.41	1.79
Gutierrezia sarothrae	-	3.21	.23
Juniperus osteosperma	15.00	8.50	11.91
Kochia prostrata	-	1.83	1.54
Opuntia sp.	-	.01	.08
Purshia tridentata	-	1.13	.28
Quercus gambelii	-	.05	.10

KEY BROWSE ANNUAL LEADER GROWTH --
 Management unit 21B, Study no: 8

Species	Average leader growth (in)	
	'03	'08
Cowania mexicana stansburiana	2.6	-
Artemisia tridentata vaseyana	-	2.6

POINT-QUARTER TREE DATA --
 Management unit 21B, Study no: 8

Species	Trees per Acre		
	'98	'03	'08
Juniperus osteosperma	46	26	33

Average diameter (in)		
'98	'03	'08
6.9	12.3	13.4

BASIC COVER --
 Management unit 21B, Study no: 8

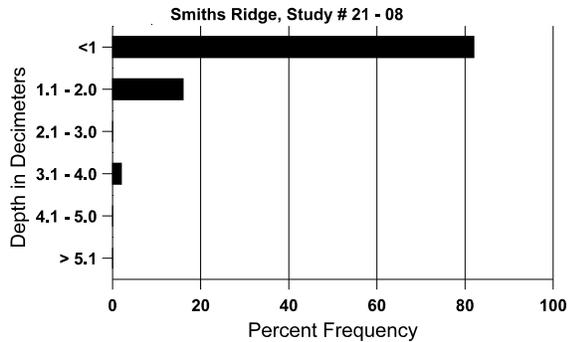
Cover Type	Average Cover %				
	'85	'91	'98	'03	'08
Vegetation	1.00	4.75	45.84	47.30	35.79
Rock	5.25	6.75	5.48	9.83	8.59
Pavement	5.25	3.00	7.62	6.87	4.42
Litter	66.75	74.50	52.99	35.81	49.83
Cryptogams	.25	0	4.07	.09	.21
Bare Ground	21.50	11.00	11.92	17.36	11.80

SOIL ANALYSIS DATA --

Management unit 21, Study no: 8, Study Name: Smiths Ridge

Effective rooting depth (in)	Temp °F (depth)	pH	sandy loam			%OM	PPM P	PPM K	ds/m
			%sand	%silt	%clay				
8.9	66.2 (6.3)	5.7	62.0	19.4	18.6	3.5	12.0	76.8	0.4

Stoniness Index



PELLET GROUP DATA --

Management unit 21B, Study no: 8

Type	Quadrat Frequency		
	'98	'03	'08
Rabbit	8	10	44
Elk	11	3	5
Deer	15	41	66
Cattle	-	3	3

Days use per acre (ha)		
'98	'03	'08
-	-	-
28 (69)	12 (30)	3 (8)
70 (173)	90 (222)	140 (346)
-	2 (4)	12 (29)

BROWSE CHARACTERISTICS --

Management unit 21B, Study no: 8

		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)
<i>Artemisia tridentata vaseyana</i>												
85	1331	-	133	399	799	-	25	0	60	-	10	28/25
91	1531	266	599	466	466	-	13	4	30	4	13	16/17
98	2040	-	280	1480	280	600	48	.98	14	7	12	20/27
03	1440	40	880	440	120	60	31	8	8	3	3	14/18
08	1400	20	380	980	40	80	20	0	3	1	1	16/21

		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)
Chrysothamnus nauseosus hololeucus												
85	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	80	-	-	80	-	-	0	0	-	-	0	12/13
08	0	-	-	-	-	20	0	0	-	-	0	25/30
Cowania mexicana stansburiana												
85	332	-	-	266	66	-	80	0	20	-	0	68/81
91	266	133	-	133	133	-	75	0	50	-	0	142/53
98	220	-	40	180	-	20	64	0	0	-	0	56/106
03	60	-	-	40	20	-	67	33	33	-	0	57/94
08	80	-	20	20	40	-	0	0	50	25	25	67/57
Gutierrezia sarothrae												
85	2464	-	66	1999	399	-	0	0	16	-	30	13/12
91	2665	133	399	2266	-	-	0	0	0	-	0	12/11
98	3160	-	620	2540	-	-	0	0	0	-	0	10/13
03	2740	-	60	2520	160	-	3	0	6	5	5	10/12
08	1500	300	200	900	400	320	0	1	27	17	21	7/11
Juniperus osteosperma												
85	133	-	-	133	-	-	0	0	-	-	0	69/109
91	133	-	-	133	-	-	0	0	-	-	0	144/111
98	100	20	-	100	-	20	0	0	-	-	0	-/-
03	80	-	-	80	-	-	0	0	-	-	0	-/-
08	40	-	-	40	-	-	0	0	-	-	0	-/-
Kochia prostrata												
85	0	-	-	-	-	-	0	0	0	-	0	-/-
91	0	-	-	-	-	-	0	0	0	-	0	-/-
98	0	-	-	-	-	-	0	0	0	-	0	-/-
03	4020	100	1860	2160	-	-	57	2	0	-	0	9/14
08	6000	780	2080	3720	200	40	36	22	3	1	1	6/10
Opuntia sp.												
85	0	-	-	-	-	-	0	0	0	-	0	-/-
91	0	-	-	-	-	-	0	0	0	-	0	-/-
98	20	-	-	-	20	-	0	0	100	100	100	8/17
03	80	-	40	40	-	-	0	0	0	-	0	6/9
08	80	-	-	80	-	-	0	0	0	-	0	6/14

		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)
Purshia tridentata												
85	532	-	133	333	66	-	75	0	12	-	0	25/23
91	266	-	-	133	133	-	75	0	50	8	25	30/51
98	600	-	20	580	-	20	67	20	0	-	0	42/90
03	60	-	-	60	-	-	67	33	0	-	0	46/88
08	240	-	160	-	80	-	0	33	33	8	8	32/62
Quercus gambelii												
85	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	83/69
03	20	-	-	20	-	-	0	0	-	-	0	16/12
08	40	-	20	20	-	-	0	0	-	-	0	-/-
Rhus glabra cismontana												
85	0	-	-	-	-	-	0	0	0	-	0	-/-
91	0	-	-	-	-	-	0	0	0	-	0	-/-
98	60	-	-	-	60	-	100	0	100	67	67	-/-
03	0	-	-	-	-	-	0	0	0	-	0	-/-
08	0	-	-	-	-	-	0	0	0	-	0	18/35
Ribes sp.												
85	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	200	-	-	200	-	-	0	0	-	-	0	11/14
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	-/-