

Trend Study 25C-28-08

Study site name: North Creek .

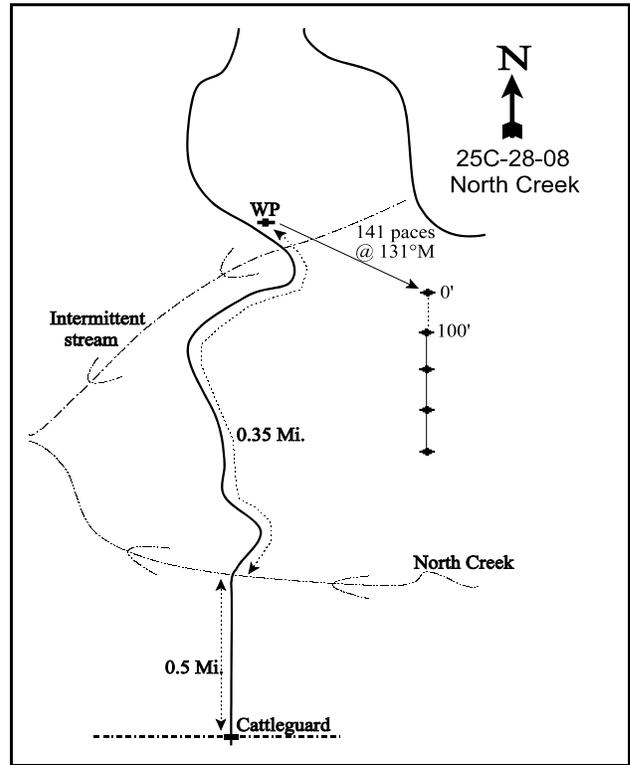
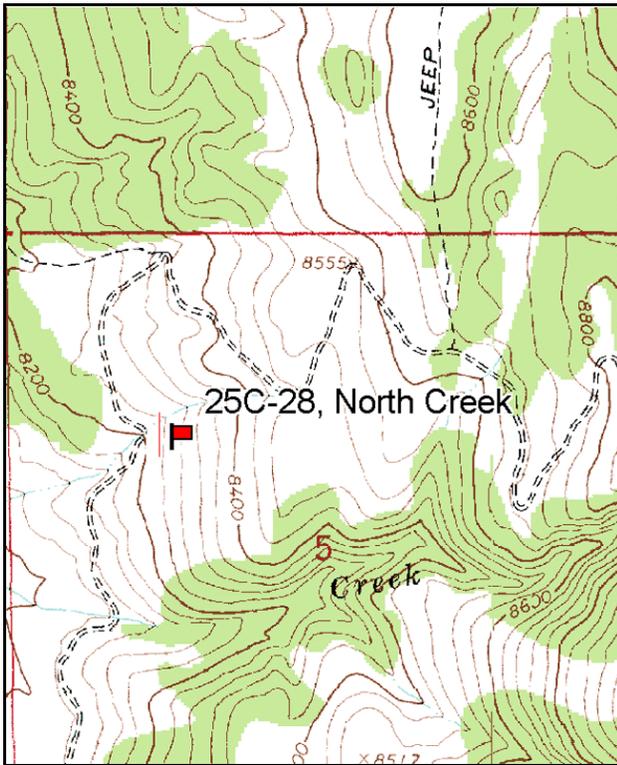
Vegetation type: Mountain Brush .

Compass bearing: frequency baseline 180 degrees magnetic.

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

LOCATION DESCRIPTION

From the intersection of SR12 and Rt. 1660 (to 22) turn left onto Johns Flat Road. Drive 17.2 miles north to Grass Lake road (USFS sign) and turn east. Travel 1.2 miles on this road to a fork by hayfields. Turn right and continue 0.4 miles to the Horse Creek fork. Turn left and proceed 1.15 miles to a signed fork. Stay left and continue 0.25 miles on the main road. Pass the buildings, at Birch Creek, take the right fork and go 0.6 miles. Stay left at the fork and go 0.75 miles to a cattleguard. Continue 0.75 miles to a fork. Stay left and go 1.65 miles to a U.S. Forest Service enclosure. Continue 2.55 miles to a cattleguard. Continue 0.5 miles to North Creek. Cross and go 0.35 miles, over an intermittent stream and partway up a hill to a witness post on the right. The transect is 80 paces bearing 118 degrees magnetic up on a hillside. The 0-foot baseline stake is tagged #7168.



Map Name: Grass Lakes

Diagrammatic Sketch

Township 33S, Range 1W, Section 5

GPS: NAD 83, UTM 12S 418600 E, 4202672 N

DISCUSSION

North Creek - Trend Study No. 25C-28

Study Information

This study site is located in the upper drainage of North Creek [elevation: 8,300 feet (2,530 m), slope: 10%-23%, aspect: west]. The study samples a mixed mountain brush range dominated by pinyon pine (*Pinus edulis*), juniper (*Juniperus scopulorum*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), and bitterbrush (*Purshia tridentata*). A wildfire, likely the Mud Lake fire, burned the study in 2002, removing many of the shrubs. The area receives light to moderate deer use in mild winters, but is more of a transitional range. Pellet group data estimated deer use to be lightly moderate in 1998 (18 ddu/acre:44 ddu/ha), and light in 2003 and 2008 (11 ddu/acre:26 ddu/ha and 9 ddu/acre:21.5 ddu/ha, respectively). There was only one elk pellet group encountered in 1998, and none in 2003. Elk use increased in 2008 and was estimated to be light (13 edu/acre:33 edu/ha). Cattle use was estimated to be moderate in 1998 and 2008 (21 cdu/acre:52 cdu/ha and 19 cdu/acre:47 cdu/ha, respectively), and was minimal in 2003 with only 1 cattle pat encountered. Rabbit sign was moderately abundant in 1998.

Soil

The soil is an extremely rocky loam which is slightly acidic in reaction (pH 6.1). Rock consists of basalt which is dark in color. The soil profile also contains high amounts of rock and gravel. Soil depth is relatively shallow with an effective rooting depth of just over 11 inches. Phosphorus limits plant growth and development at 8.3 ppm (Tiedemann and Lopez 2004). An abandoned road on the hillside has water bars to check erosion, which could become a problem on the site except for the protection afforded by the rocky surface. Relative combined vegetation and litter cover was 60% in 1998, decreasing to 27% in 2003 after the fire, and increasing to 48% in 2008. Relative combined rock and pavement cover was 37% in 1998, 63% in 2003, and 46% in 2008. Relative bare ground was low with 4% in 1998, 10% in 2003, and 6% in 2008. The erosion condition class was rated as stable in 2003 and 2008.

Browse

There is an overstory of scattered pinyon pine and Rocky Mountain juniper on the site. Point-quarter data from 1998 estimated 46 pinyon and 29 juniper trees/acre. Average basal diameter was 3.4 inches for pinyon and 5.4 inches for juniper. Nearly all of the pinyon and juniper trees were eliminated by the fire. Point-quarter data was not recorded in 2003. Density was estimated to be 23 pinyon and 22 juniper trees/acre in 2008. Average basal diameter decreased in pinyon to 1.6 inches and increased in juniper to 6.2 inches. Combined line-intercept canopy cover was estimated to be about 5% in 1998, but was less than 1% in 2003 and 2008.

The principal understory shrubs include mountain big sagebrush and bitterbrush. Sagebrush provided 56% of the total browse cover in 1998. Density of sagebrush was estimated at 8,466 plants/acre in 1987 increasing to 12,599 plants/acre in 1991. Density was very high considering the limited soil on the site. The larger sample used in 1998 estimated a much lower density of 6,380 plants/acre. Most of the change in density may be due to the larger sample used in 1998. It appears that most of the decadent plants sampled in 1991 died prior to the 1998 reading. Reproduction was limited and not adequate to maintain the stand. The area burned in 2002. The fire burned all of the shrubs along the first 200 feet of the study site baseline and burned more spotty along the rest of the baseline. Density of sagebrush was estimated at 1,520 plants/acre in 2003, about 1/3 of which were classified as decadent. Mature sagebrush that survived the fire produced abundant seed and had excellent annual leader growth averaging 3 inches in 2003. Young plants were moderately abundant. Density of sagebrush increased by 63% in 2008 to 4,120 plants/acre and recruitment of young plants was good. Utilization of the sagebrush has been mostly light to moderate since 1987. Vigor has been good since the study was established in 1987.

Bitterbrush is also a key species on the site, although not as numerous. It provided 28% of the shrub cover in 1998. Density increased 64% between 1987 and 1991, from 599 to 1,666 plants/acre. The larger sample used

in 1998 estimated a similar density of 1,100 plants/acre. Bitterbrush generally displayed good vigor and low decadence from 1987 to 1998. Density of bitterbrush declined by 93% in 2003 after the fire to only 80 plants/acre, and increased only slightly to 120 plants/acre in 2008. Plants displaying poor vigor has remained low at 17%, but decadence has increased to 33% in 2008.

Other preferred browse species such as curlleaf mountain mahogany (*Cercocarpus ledifolius*), serviceberry (*Amelanchier*), and snowberry (*Symphoricarpos oreophilus*) are found scattered in the area but they are relatively uncommon. The increaser species, rubber rabbitbrush (*Chrysothamnus nauseosus*), stickyleaf low rabbitbrush (*C. viscidiflorus* ssp. *viscidiflorus*) and broom snakeweed (*Gutierrezia sarothrae*), have increased in density on the site since the fire. Rubber rabbitbrush had a density of 2,140 plants/acre, stickyleaf low rabbitbrush had a density of 3,340 plants/acre, and broom snake weed had a density of 4,560 plants/acre in 2008. The populations of all three species appeared to be healthy and capable of further increases.

Herbaceous Understory

Grass and forb frequencies are very low, undoubtedly due to the rocky nature of the soil surface. Seven grass species were sampled in 1998 but they combined to produce less than 1% cover. The most common species in 1998 were bottlebrush squirreltail (*Sitanion hystrix*) and blue grama (*Bouteloua gracilis*). Bottlebrush squirreltail was the dominant grass species in 2008 comprising 91% of the total grass cover. Forbs are diverse with 17 species encountered in 1998 and 2003, and 21 species in 2008. However, none occur more than occasionally and production is poor with these species combining to produce less than 1% cover in 1998. Forb production increased after the 2002 fire with forb cover averaging over 6% in 2003, but decreasing to 3% in 2008.

1991 TREND ASSESSMENT

Trend for browse is up. There are two key browse species on site, mountain big sagebrush and antelope bitterbrush. Mountain big sagebrush has increased substantially since 1987. Sagebrush decadence is only 26%, which should not be considered a problem with an extremely high density (12,599 plants/acre) and the extended drought figured in. Bitterbrush has more than doubled its population (599 to 1,666 plants/acre) with young plants comprising 12% of the population. Bitterbrush decadence is moderate at 32%, but this is consistent with what has been observed in other areas during the extended drought. Trend for grasses and forbs is down slightly due to a slight decline in the sum of nested frequency values for both grasses and forbs.

browse - up (+2)

grass - slightly down (-1)

forb - slightly down (-1)

1998 TREND ASSESSMENT

Trend for browse is mixed. Mountain big sagebrush has a declining population which has gone down 49% in density since 1991. Decadence is moderate at 19%, and reproduction is poor and not adequate to maintain the population. Trend for bitterbrush appears stable. Density has declined slightly, decadence decreased from 32% to 9% as well. Leader growth is excellent and reproduction is good. Since mountain big sagebrush provides 56% of the browse cover on the site, overall browse trend is considered slightly down. The herbaceous understory is deficient producing only 1.6% cover. The trend for the grasses is slightly down. Sum of nested frequency of grasses has declined. The trend for forbs is stable. The sum of nested frequency of perennial forbs has remained stable.

winter range condition (DCI) - poor (46) Mid-level potential scale

browse - slightly down (-1)

grass - slightly down (-1)

forb - stable (0)

2003 TREND ASSESSMENT

Trend for browse is down. Fire eliminated most of the shrubs on the first half of the study site baseline but the burn was spotty along the rest of the baseline. Density of sagebrush declined 76% to 1,520 plants/acre. Vigor was good, and young recruitment is currently adequate to maintain the stand. Surviving mature plants are producing abundant seed and display excellent annual leader growth averaging 3 inches in 2003. Most of the bitterbrush was eliminated by the fire but some mature plants survived. Density was estimated at only 80

plants/acre, half of which are young. Trend for the grasses is stable. Sum of nested frequency of perennial grasses declined slightly but cover of perennial grasses more than doubled (0.74% to 1.93%). The most abundant grass sampled in 2003 was bottlebrush squirreltail which accounted for 73% of the total grass cover. The trend for forbs is up. The sum of nested frequency of perennial forbs increased 33%, while cover of perennial forbs rose nearly 8 fold (0.82 to 6.36%). Total herbaceous cover is still low however, averaging only 8.5% cover in 2003. Common forbs included beakwith milkvetch (*Astragalus beckwithii*) and lobeleaf groundsel (*Senecio multilobatus*). The herbaceous understory is still poor and limited by the extremely rocky nature of the soil surface.

winter range condition (DCI) - very poor (31) Mid-level potential scale
browse - down (-2) grass - stable (0) forb - up (+2)

2008 TREND ASSESSMENT

Trend for browse is slightly up. The primary browse species, mountain big sagebrush, increased in density to 4,120 plants/acre. Sagebrush displaying poor vigor remained low, and decadence decreased to 20% from 29% in 2003. Recruitment was good with young plants comprising 21% of the sagebrush population. The other preferred shrub species, antelope bitterbrush, density increased slightly to 120 plants/acre, but decadence increased to 33%. The increaser species rubber rabbitbrush, stickyleaf low rabbitbrush, and broom snakeweed have increased considerably in density since the fire in 2002. The populations of these species appears to be healthy and capable of further expansion. The trend for grasses is up. There was a large increase in the sum of nested frequency of perennial grasses, primarily due to the significant increase in frequency of bottlebrush squirreltail. Total cover of perennial grasses also increased to over 7% from about 2% in 2003. The trend for forbs is stable. The sum of nested frequency of perennial forbs increased slightly, but total cover decreased to around 3% from about 6% in 2003.

winter range condition (DCI) - poor (48) Mid-level potential scale
browse - slightly up (+1) grass - up (+2) forb - stable (0)

HERBACEOUS TRENDS --
Management unit 25C, Study no: 28

Type	Species	Nested Frequency					Average Cover %		
		'87	'91	'98	'03	'08	'98	'03	'08
G	Agropyron cristatum	_b 28	_a 10	_a 1	_a -	_a 9	.01	-	.04
G	Agropyron spicatum	2	-	-	1	3	-	.03	.15
G	Bouteloua gracilis	-	2	2	2	7	.15	.15	.06
G	Bromus inermis	_b 12	_{ab} 6	_a 4	_a -	_a -	.01	-	-
G	Bromus tectorum (a)	-	-	_a 2	_a 13	_b 73	.00	.21	.37
G	Oryzopsis hymenoides	9	2	1	-	4	.00	-	.06
G	Poa fendleriana	-	3	2	3	1	.01	.15	.03
G	Poa secunda	2	3	-	-	-	-	.03	-
G	Sitanion hystrix	_{ab} 82	_b 90	_{ab} 69	_a 48	_c 262	.54	1.57	6.89
G	Stipa lettermani	_b 19	_a 4	_a -	_a -	_a -	.01	-	-
Total for Annual Grasses		0	0	2	13	73	0.00	0.21	0.37
Total for Perennial Grasses		154	120	79	54	286	0.74	1.93	7.24
Total for Grasses		154	120	81	67	359	0.74	2.15	7.62

Type	Species	Nested Frequency					Average Cover %		
		'87	'91	'98	'03	'08	'98	'03	'08
F	<i>Antennaria rosea</i>	1	1	1	-	-	.00	-	-
F	<i>Arabis</i> sp.	_b 16	_{ab} 6	_{ab} 7	_a 1	_b 21	.02	.01	.05
F	<i>Astragalus beckwithii</i>	_a -	_a 7	_{ab} 14	_b 29	_a 7	.07	1.73	.02
F	<i>Astragalus convallarius</i>	2	3	5	3	1	.15	.04	.00
F	<i>Chaenactis douglasii</i>	_a -	_a 6	_{ab} 5	_a -	_b 21	.04	-	.32
F	<i>Chenopodium leptophyllum</i> (a)	-	-	_a -	_a -	_b 14	-	-	.03
F	<i>Crepis acuminata</i>	-	4	3	-	1	.00	-	.00
F	<i>Cryptantha bakeri</i>	10	8	10	16	16	.10	.25	.09
F	<i>Descurainia pinnata</i> (a)	-	-	1	-	-	.00	-	-
F	<i>Eriogonum cernuum</i> (a)	-	-	-	-	2	-	-	.03
F	<i>Erigeron pumilus</i>	_a -	_a 3	_a 21	_a 8	_b 38	.14	.24	.25
F	<i>Eriogonum racemosum</i>	_a 7	_a 6	_a 3	_a 10	_b 32	.05	.20	.42
F	<i>Eriogonum umbellatum</i>	-	-	-	-	2	-	-	.00
F	<i>Gayophytum ramosissimum</i> (a)	-	-	_a -	_b 68	_a 3	-	.55	.00
F	<i>Gilia</i> sp. (a)	-	-	-	5	-	-	.07	-
F	<i>Hymenopappus filifolius</i>	_b 10	_a -	_a -	_a 1	_a -	-	.15	-
F	<i>Hymenoxys richardsonii</i>	12	4	-	-	-	-	-	-
F	<i>Ipomopsis aggregata</i>	-	-	-	-	2	-	-	.00
F	<i>Linum lewisii</i>	4	2	-	-	-	-	-	-
F	<i>Lotus utahensis</i>	5	4	6	9	1	.01	.22	.03
F	<i>Lygodesmia spinosa</i>	_b 16	_{ab} 11	_a 1	_{ab} 8	_b 15	.00	.22	.74
F	<i>Machaeranthera canescens</i>	_a 13	_a 6	_a -	_a 2	_b 38	.03	.19	.30
F	<i>Oenothera caespitosa</i>	8	7	-	7	7	-	.68	.01
F	<i>Petradoria pumila</i>	15	14	4	3	15	.09	.18	.43
F	<i>Phlox longifolia</i>	_{ab} 9	_b 20	_a 5	_a 6	_{ab} 7	.01	.01	.01
F	<i>Physaria</i> sp.	-	3	-	-	-	-	-	-
F	<i>Senecio multilobatus</i>	_{ab} 11	_a -	_b 31	_c 52	_a 1	.06	1.58	.03
F	<i>Streptanthus cordatus</i>	4	3	1	-	1	.00	-	.00
F	<i>Tragopogon dubius</i>	1	-	-	1	-	-	.00	-
F	Unknown forb-perennial	_b 17	_a -	_a -	_a -	_a -	-	-	-
Total for Annual Forbs		0	0	1	73	19	0.00	0.62	0.07
Total for Perennial Forbs		161	118	117	156	226	0.82	5.75	2.75
Total for Forbs		161	118	118	229	245	0.83	6.36	2.82

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

BROWSE TRENDS --

Management unit 25C, Study no: 28

Type	Species	Strip Frequency			Average Cover %		
		'98	'03	'08	'98	'03	'08
B	<i>Artemisia frigida</i>	0	0	1	-	-	.03
B	<i>Artemisia nova</i>	4	0	0	1.67	-	-
B	<i>Artemisia tridentata vaseyana</i>	97	29	68	21.14	5.35	6.94
B	<i>Chrysothamnus nauseosus</i>	2	12	39	.00	.51	1.31
B	<i>Chrysothamnus viscidiflorus viscidiflorus</i>	6	4	24	.03	.38	.86
B	<i>Gutierrezia sarothrae</i>	8	27	60	.25	.93	3.62
B	<i>Juniperus scopulorum</i>	2	1	1	1.50	.15	.18
B	<i>Pediocactus simpsonii</i>	0	1	2	-	.00	.00
B	<i>Pinus edulis</i>	8	0	0	2.62	-	-
B	<i>Purshia tridentata</i>	38	4	6	10.36	.00	.15
B	<i>Tetradymia canescens</i>	0	1	2	-	.00	.00
Total for Browse		165	79	203	37.60	7.34	13.09

CANOPY COVER, LINE INTERCEPT --

Management unit 25C, Study no: 28

Species	Percent Cover		
	'98	'03	'08
<i>Artemisia frigida</i>	-	-	.08
<i>Artemisia tridentata vaseyana</i>	-	6.26	10.66
<i>Chrysothamnus nauseosus</i>	-	.46	1.88
<i>Chrysothamnus viscidiflorus viscidiflorus</i>	-	.28	1.20
<i>Gutierrezia sarothrae</i>	-	1.25	2.95
<i>Juniperus scopulorum</i>	1.79	.78	.90
<i>Pinus edulis</i>	3.00	-	-

KEY BROWSE ANNUAL LEADER GROWTH --

Management unit 25C, Study no: 28

Species	Average leader growth (in)	
	'03	'08
<i>Artemisia tridentata vaseyana</i>	3.0	1.1
<i>Purshia tridentata</i>	4.4	2.6

POINT-QUARTER TREE DATA --
Management unit 25C, Study no: 28

Species	Trees per Acre		
	'98	'03	'08
Juniperus scopulorum	29	-	22
Pinus edulis	46	-	23

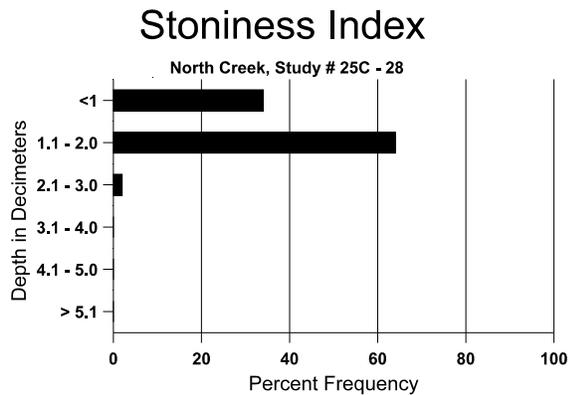
Average diameter (in)		
'98	'03	'08
5.4	-	6.2
3.4	-	1.6

BASIC COVER --
Management unit 25C, Study no: 28

Cover Type	Average Cover %				
	'87	'91	'98	'03	'08
Vegetation	2.50	4.25	42.77	14.67	29.50
Rock	18.75	21.25	15.84	30.12	21.12
Pavement	34.00	31.25	32.10	38.38	29.91
Litter	39.75	36.25	34.57	13.84	22.98
Cryptogams	0	0	0	0	0
Bare Ground	5.00	7.00	4.58	11.23	6.44

SOIL ANALYSIS DATA --
Management unit 25C, Study no: 28, Study Name: North Creek

Effective rooting depth (in)	Temp °F (depth)	pH	loam			%OM	PPM P	PPM K	ds/m
			% sand	% silt	% clay				
11.3	58.3 (11.6)	6.1	46.0	29.4	24.6	2.7	8.3	211.2	0.4



PELLET GROUP DATA --

Management unit 25C, Study no: 28

Type	Quadrat Frequency		
	'98	'03	'08
Rabbit	7	1	74
Elk	-	-	9
Deer	14	1	8
Cattle	-	-	6

Days use per acre (ha)		
'98	'03	'08
-	-	-
1 (2)	-	13 (33)
18 (44)	11 (26)	9 (22)
21 (52)	1 (2)	19 (47)

BROWSE CHARACTERISTICS --

Management unit 25C, Study no: 28

		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 frigida</i>												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	20	-	-	20	-	-	100	0	-	-	0	9/11
<i>Artemisia nova</i>												
87	266	-	-	266	-	-	50	0	0	-	0	9/11
91	0	-	-	-	-	-	0	0	0	-	0	-/-
98	340	-	-	280	60	-	29	0	18	6	6	11/18
03	0	-	-	-	-	-	0	0	0	-	0	-/-
08	0	-	-	-	-	-	0	0	0	-	0	-/-
<i>Artemisia tridentata vaseyana</i>												
87	8465	-	533	6599	1333	-	35	0	16	-	0	12/15
91	12599	-	733	8533	3333	-	28	6	26	4	15	12/16
98	6380	40	200	4940	1240	1600	38	1	19	9	19	15/26
03	1520	40	140	940	440	4840	0	0	29	11	11	15/26
08	4120	320	880	2400	840	520	26	.48	20	8	8	15/26
<i>Chrysothamnus nauseosus</i>												
87	0	-	-	-	-	-	0	0	0	-	0	-/-
91	266	-	-	133	133	-	0	75	50	8	25	4/4
98	40	-	-	40	-	-	0	0	0	-	0	10/14
03	240	-	-	240	-	-	0	0	0	-	0	11/14
08	2140	-	620	1100	420	-	18	5	20	-	3	13/20

		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)
Chrysothamnus viscidiflorus viscidiflorus												
87	466	-	-	466	-	-	0	0	0	-	0	11/7
91	265	-	-	199	66	-	50	0	25	-	0	5/5
98	140	-	20	120	-	-	0	0	0	-	0	10/9
03	80	-	-	80	-	-	0	0	0	-	0	12/16
08	3340	220	1680	1320	340	-	37	29	10	2	3	11/16
Eriogonum microthecum												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	66	-	-	66	-	-	0	0	-	-	0	5/8
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	-/-
Gutierrezia sarothrae												
87	799	-	-	799	-	-	0	0	0	-	0	9/7
91	1132	-	133	866	133	-	0	0	12	2	6	7/5
98	180	60	20	160	-	-	0	0	0	-	0	11/9
03	1160	-	20	1140	-	-	0	0	0	-	0	10/11
08	4560	80	380	3760	420	60	0	0	9	2	2	8/10
Juniperus scopulorum												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	66	-	-	-	-	0	0	-	-	0	-/-
98	40	60	20	20	-	-	0	0	-	-	0	-/-
03	20	-	-	20	-	-	0	0	-	-	0	-/-
08	20	-	-	20	-	20	0	0	-	-	0	-/-
Pediocactus simpsonii												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	40	-	-	40	-	-	0	0	-	-	0	1/2
08	40	-	20	20	-	-	0	0	-	-	0	2/3
Pinus edulis												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	180	40	140	40	-	-	0	0	-	-	0	-/-
03	0	-	-	-	-	120	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	-/-

		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												
87	599	-	66	533	-	-	22	0	0	-	0	33/37
91	1665	199	199	933	533	-	84	8	32	-	0	35/44
98	1100	60	120	880	100	160	47	0	9	4	4	28/56
03	80	20	20	40	20	80	25	50	25	25	25	15/23
08	120	40	20	60	40	-	50	33	33	17	17	21/41
Ribes sp.												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	25/30
Symphoricarpos oreophilus												
87	0	-	-	-	-	-	0	0	-	-	0	-/-
91	0	-	-	-	-	-	0	0	-	-	0	-/-
98	0	-	-	-	-	-	0	0	-	-	0	-/-
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	13/29
Tetradymia canescens												
87	0	-	-	-	-	-	0	0	0	-	0	-/-
91	0	-	-	-	-	-	0	0	0	-	0	-/-
98	0	-	-	-	-	-	0	0	0	-	0	-/-
03	20	-	-	20	-	-	0	0	0	-	0	10/14
08	40	-	-	-	40	-	50	50	100	-	0	8/15