

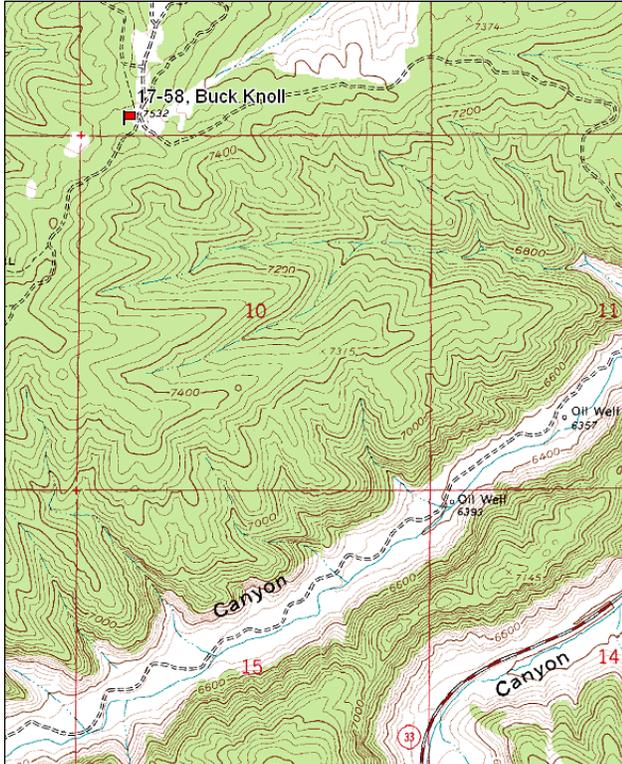
BUCK KNOLL - TREND STUDY NO. 17-58-10

Vegetation Type: Chained, Seeded Pinyon-Juniper
Range Type: Crucial Deer Winter, Crucial Elk Winter
NRCS Ecological Site Description: Not Available
Land Ownership: UDWR
Elevation: 7571 ft. (2308 m)
Aspect: North
Slope: 3%-5%
Transect bearing: 345° magnetic
Belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

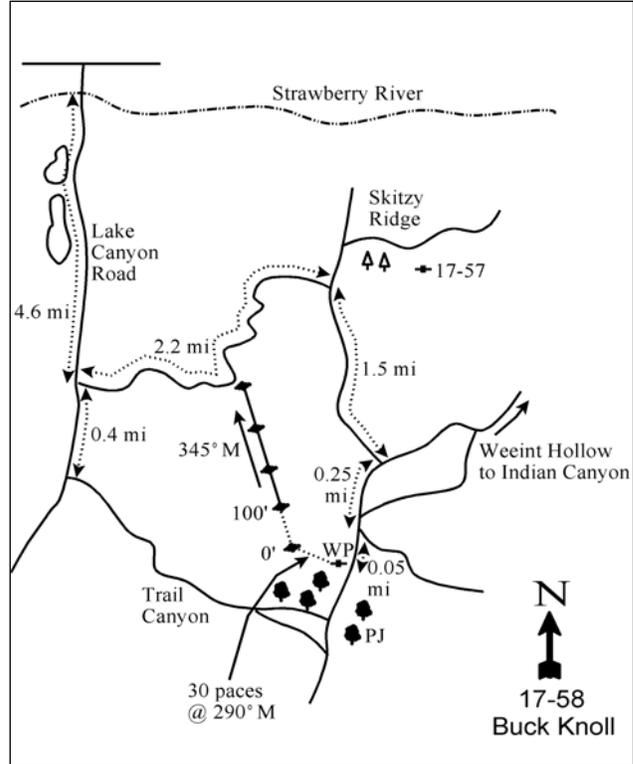
Directions:

From the Strawberry River, take the Lake Canyon Road (3239 West) south for 4.6 miles to a road which goes up the side canyon to the east. Turn left and go up the side canyon and switchbacks for 2.2 miles to an intersection at the top of the ridge. Turn right and drive south 1.5 miles to an intersection. Turn right and go 0.25 miles to a fork. Bear right and proceed up the hill 0.05 miles to the witness post, a short green fencepost on the right side of the road. From the witness post, the 0-foot baseline stake is 30 paces west (290°M) down the hill.

Map Name: Buck Knoll



Diagrammatic Sketch:



Township: 5S Range: 6W Section: 3

GPS: NAD 83, UTM 12T 538132 E 4435473 N

BUCK KNOLL - TREND STUDY NO. 17-58

Site Information

Site Description: The study is located in the Skitzzy Wildlife Management Area (WMA) on a Utah Division of Wildlife Resources (UDWR) chaining and seeding. The study is within 100 yards of an untreated pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) woodlands edge. There is a large amount of energy development in the area surrounding the WMA, with many new roads and heavy traffic. Limited spring cattle grazing has occurred in the area since 2009. Pellet group transect data has estimated light use by deer since 2000. Estimated use by elk has fluctuated from moderate use in 2000, heavy use in 2005 and light use in 2010. Estimated cattle use has been light since 2000 (Table - Pellet Group Data).

Browse: The browse is more abundant on this study area than at Skitzzy Canyon (17-57) study, but it is still well below optimum for a deer winter range. The key species consists of a small stand of true mountain mahogany (*Cercocarpus montanus*). Mahogany cover has gradually, but steadily increased since 1995 (Table - Browse Trends). The mahogany plants are about 4 to 6.5 feet in height and have exhibited light to heavy utilization, depending on the year. Decadence is low and vigor is good within the mahogany population. Recruitment of young mahogany plants has been mostly good over the course of the study, but there were no young plants sampled in 2010. Secondary browse species provide additional forage and include: black sagebrush (*Artemisia nova*), mountain big sagebrush (*A. tridentata* ssp. *vaseyana*), rubber rabbitbrush (*Chrysothamnus nauseosus* ssp. *graveolens* and *C. nauseosus* ssp. *hololeucus*), antelope bitterbrush (*Purshia tridentata*) and elderberry (*Sambucus cerulea*) (Table - Browse Characteristics).

Herbaceous Understory: The herbaceous understory is dominated by an abundant and diverse variety of grasses. Crested wheatgrass (*Agropyron cristatum*) and Salina wildrye (*Elymus salina*) are the most abundant grass species, but other perennial species are prevalent including intermediate wheatgrass (*Agropyron intermedium*), Russian wildrye (*Elymus junceus*) and Indian ricegrass (*Oryzopsis hymenoides*). Forbs are diverse, but provide little cover. The more common species are native species like hoary aster (*Machaeranthera grindelioides*), mat penstemon (*Penstemon caespitosus*) and wing eriogonum (*Eriogonum alatum*) (Table - Herbaceous Trends).

Soil: The soil texture is a clay loam with a slightly alkaline soil reaction (pH 7.4). Phosphorus may have limited availability for plant growth and development at 5.1 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). Bare ground cover is low, but has increased since 1995 with a corresponding decrease in litter cover. Rock and pavement are common on the surface and provide additional protective ground cover (Table - Basic Cover). There is some localized soil movement, but erosion is not severe and the soil erosion condition is vastly better than in the nearby untreated juniper-pinyon woodlands. The soil erosion condition was classified as stable in 2005 and 2010.

Trend Assessments

Browse:

- **1982 to 1988 - slightly up (+1):** There was a 29% increase in the density of true mountain mahogany, but density remained low. Young mahogany plants comprise 78% of the population.
- **1988 to 1995 - stable (0):** Differences in density may be related to the larger sample area used in 1995; therefore, trend was determined using other parameters. There was little change in vigor or decadence of true mountain mahogany. Recruitment of young mahogany plants decreased markedly, but was still good at 14% of the population.
- **1995 to 2000 - stable (0):** There was a 7% increase in the density of true mountain mahogany from 580 plants/acre to 620 plants/acre and cover increased from 3% to 5%. The slight increase in density was primarily due to an increase in the recruitment of young mahogany plants to 23%.

- **2000 to 2005 - up (+2):** Although densities remained low, the densities of the preferred browse species black sagebrush, mountain big sagebrush and true mountain mahogany all increased. Mahogany increased in density by 23% to 800 plants/acre.
- **2005 to 2010 - slightly down (-1):** The density of true mountain mahogany decreased by 20% to 640 plants/acre, though cover increased to 6%. The decrease in density was due to a decrease in the recruitment of young mahogany plants, with no young plants being sampled in 2010.

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 - stable (0):** There was little change in the sum of nested frequency of perennial grasses.
- **1995 to 2000 - down (-2):** The sum of nested frequency of perennial grasses decreased by 24%, but cover increased slightly from 17% to 18%.
- **2000 to 2005 - stable (0):** The perennial grass sum of nested frequency remained similar, though cover increased to 20%.
- **2005 to 2010 - stable (0):** There was little change in the sum of nested frequency of perennial grasses, but cover decreased to 16%.

Forb:

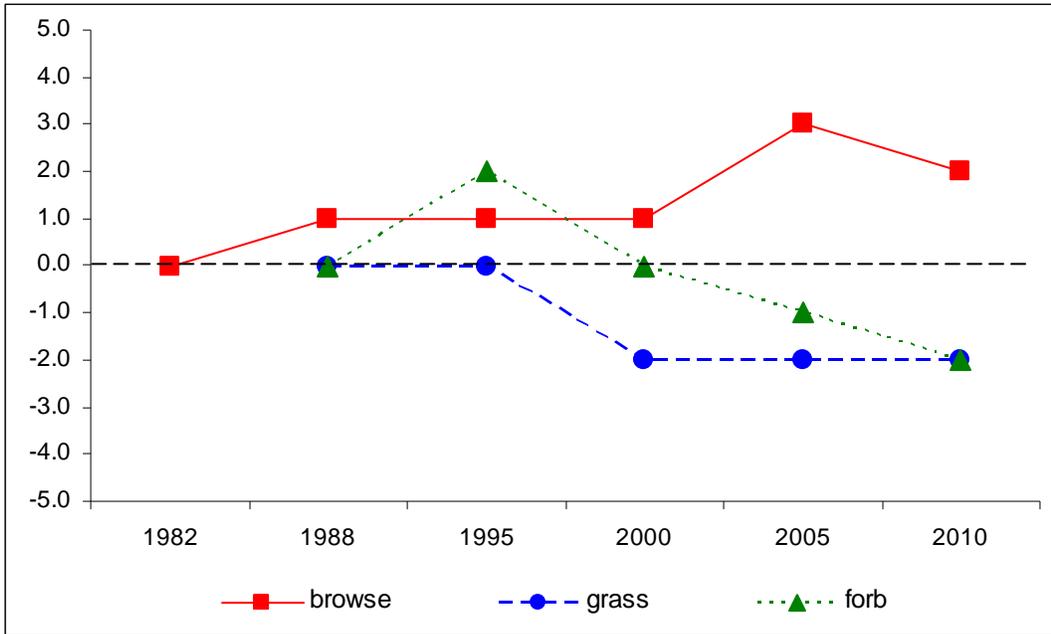
- **1982 to 1988 - no trend (NT):** Only quadrat frequency data for forbs are available from 1982, so no trend was given.
- **1988 to 1995 - up (+2):** The sum of nested frequency of perennial forbs increased by 23%.
- **1995 to 2000 - down (-2):** The perennial forb sum of nested frequency decreased by 54% and cover decreased from 2% to less than 1%. Forbs were rare on the site.
- **2000 to 2005 - slightly down (-1):** The sum of nested frequency of perennial forbs decreased by 29% and forbs remained rare on the site.
- **2005 to 2010 - slightly down (-1):** There was a 27% decrease in the sum of nested frequency of perennial forbs and forbs were very rare on the site.

DEER DESIRABLE COMPONENTS INDEX - MID-LEVEL POTENTIAL SCALE --
Management unit 17, study no: 58

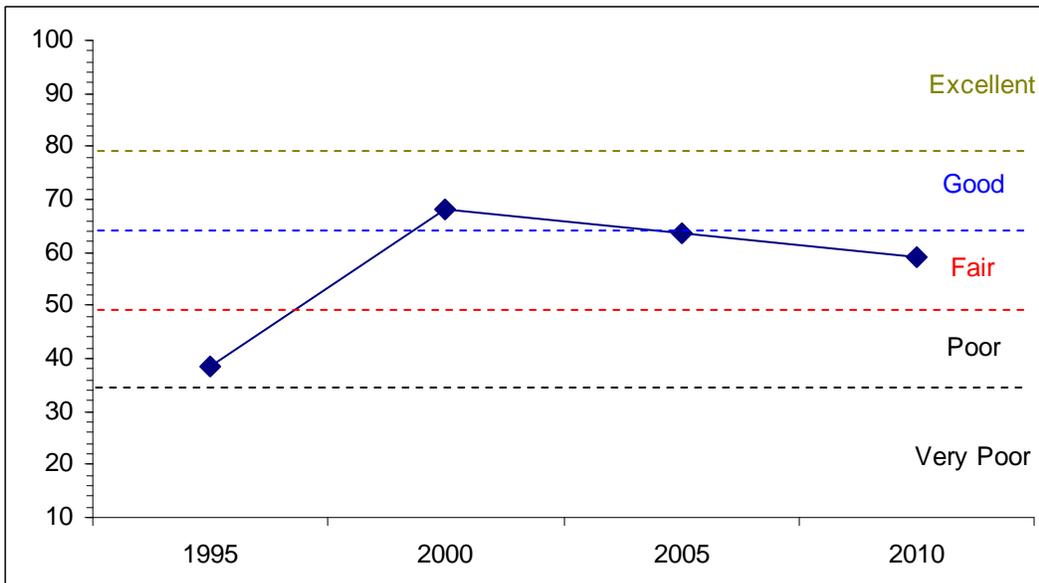
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
95	4.9	0.0	0.0	30.0	0.0	3.6	0.0	38.5	Poor
00	7.9	15.0	13.8	30.0	0.0	1.6	0.0	68.3	Good
05	8.4	15.0	8.3	30.0	0.0	2.0	0.0	63.6	Fair-Good
10	10.1	15.0	2.8	30.0	0.0	1.5	0.0	59.3	Fair

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
 Management unit 17, Study no: 58



DEER DESIRABLE COMPONENTS INDEX TREND, MID-LEVEL POTENTIAL--
 Management unit 17, Study no: 58



HERBACEOUS TRENDS--
Management unit 17, Study no: 58

T y P e	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
G	Agropyron cristatum	d217	c111	ab94	a71	ab96	5.14	3.99	4.88	3.06
G	Agropyron dasystachyum	8	11	16	5	3	.42	.25	.03	.41
G	Agropyron intermedium	c48	a7	abc29	bc39	ab22	.16	1.46	2.92	.78
G	Bromus inermis	b23	a3	a4	a-	a-	.03	.01	-	-
G	Carex sp.	18	24	6	8	7	.38	.21	.21	.07
G	Elymus cinereus	11	8	1	5	6	.41	.38	.53	.53
G	Elymus junceus	31	40	34	37	34	2.00	1.95	3.42	1.45
G	Elymus salina	a47	a38	b89	a35	a49	1.82	4.09	1.83	4.42
G	Oryzopsis hymenoides	a39	b89	a40	a49	a45	3.67	1.95	1.36	1.97
G	Poa fendleriana	b33	a9	a13	a11	a3	.07	.39	.13	.03
G	Poa pratensis	a-	b14	ab7	a-	a-	.17	1.70	-	-
G	Poa secunda	a-	b24	b12	b28	b34	.25	.07	.80	.23
G	Sitanion hystrix	ab43	c83	a28	bc61	a21	.61	.45	.99	.65
G	Sporobolus cryptandrus	-	3	-	-	-	.00	-	-	-
G	Stipa comata	a8	b44	a14	b51	b43	1.64	.65	2.33	2.20
G	Stipa lettermani	-	-	-	-	5	-	-	-	.53
G	Unknown grass - perennial	2	-	-	-	-	-	-	-	-
Total for Annual Grasses		0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		528	508	387	400	368	16.79	17.58	19.48	16.36
Total for Grasses		528	508	387	400	368	16.79	17.58	19.48	16.36
F	Agoseris glauca	-	-	-	-	-	.15	-	-	-
F	Androsace septentrionalis (a)	-	b23	a2	a1	a2	.10	.00	.00	.03
F	Antennaria rosea	-	-	7	2	3	-	.02	.01	.06
F	Arabis drummondii	ab6	b13	ab1	a-	a-	.02	.00	-	-
F	Arenaria fendleri	-	1	5	-	-	.00	.03	-	-
F	Astragalus argophyllus	13	8	2	3	2	.07	.00	.00	.00
F	Astragalus miser	b35	ab17	a-	a5	ab9	.24	-	.06	.22
F	Balsamorhiza sagittata	1	-	-	-	-	-	-	-	-
F	Calochortus nuttallii	-	2	-	-	-	.00	-	-	-
F	Caulanthus crassicaulis	-	2	-	6	-	.00	-	.01	-
F	Chaenactis douglasii	a-	b18	a3	ab5	a3	.04	.00	.05	.00
F	Chamaechaenactis scaposa	b6	a-	a-	a-	a-	-	-	-	-
F	Chenopodium fremontii (a)	-	b16	a-	b12	a-	.06	-	.08	-
F	Chenopodium leptophyllum(a)	-	b10	a-	a-	bc2	.05	-	-	.00
F	Cryptantha sp.	b8	b19	a-	a-	a-	.25	-	.00	-
F	Descurainia pinnata (a)	-	b29	a-	a5	a-	.22	-	.02	-
F	Erigeron eatonii	a-	a-	b10	a-	ab1	-	.07	-	.03
F	Eriogonum alatum	a-	b17	ab7	ab10	ab6	.22	.02	.09	.22
F	Gilia sp. (a)	-	1	1	-	-	.00	.00	-	-
F	Hedysarum boreale	-	1	6	1	-	.03	.04	.15	-
F	Hymenoxys acaulis	b33	ab15	a1	a9	a8	.08	.00	.05	.07
F	Ipomopsis aggregata	a-	b12	ab1	ab1	ab3	.02	.00	.03	.00
F	Lappula occidentalis (a)	-	c73	a3	b60	a5	.52	.01	.43	.01

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
F	Lesquerella sp.	c18	bc12	ab3	a3	a1	.04	.01	.00	.00
F	Linum lewisii	b16	b14	b11	a-	a-	.08	.10	-	-
F	Machaeranthera grindelioides	17	18	15	10	7	.32	.11	.24	.09
F	Penstemon caespitosus	ab13	b31	a10	a3	a-	.06	.10	.01	-
F	Penstemon sp.	-	-	-	-	1	-	-	-	.00
F	Phlox sp.	b11	a-	a-	a-	a-	-	-	-	-
F	Physaria acutifolia	a-	ab10	b15	ab8	a-	.04	.04	.16	-
F	Schoenocrambe linifolia	-	4	-	-	-	.01	-	-	-
F	Senecio canus	b11	ab4	ab3	ab2	a-	.03	.01	.03	-
F	Sphaeralcea coccinea	-	1	4	-	-	.00	.15	-	-
F	Taraxacum officinale	a-	b13	ab3	ab2	a-	.02	.01	.03	-
F	Townsendia incana	4	-	3	5	11	-	.03	.03	.02
F	Tragopogon dubius	a-	b9	a-	a-	ab2	.02	-	-	.00
F	Trifolium sp.	4	-	-	3	-	-	-	.00	-
Total for Annual Forbs		0	152	6	78	9	0.96	0.01	0.53	0.04
Total for Perennial Forbs		196	241	110	78	57	1.82	0.79	0.98	0.74
Total for Forbs		196	393	116	156	66	2.79	0.81	1.52	0.79

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

BROWSE TRENDS--

Management unit 17, Study no: 58

Type	Species	Strip Frequency				Average Cover %			
		'95	'00	'05	'10	'95	'00	'05	'10
B	Artemisia frigida	0	0	0	1	-	-	-	-
B	Artemisia nova	1	0	7	3	-	-	.04	.18
B	Artemisia tridentata vaseyana	2	3	4	4	.18	.76	.79	.93
B	Cercocarpus montanus	22	22	23	21	3.10	4.49	4.90	5.80
B	Chrysothamnus nauseosus graveolens	16	16	12	2	2.04	1.63	1.86	-
B	Chrysothamnus nauseosus hololeucus	1	10	0	15	.56	1.12	-	2.12
B	Chrysothamnus viscidiflorus lanceolatus	3	4	0	3	-	.18	-	.15
B	Cowania mexicana stansburiana	0	0	0	1	-	-	-	-
B	Eriogonum corymbosum	2	1	3	2	.15	.38	.38	-
B	Gutierrezia sarothrae	28	18	25	7	.53	.63	.42	.09
B	Juniperus osteosperma	0	6	3	5	.56	.53	.78	.44
B	Leptodactylon pungens	0	1	0	0	-	.03	-	-
B	Pinus edulis	0	5	5	4	1.16	3.05	.81	1.78
B	Purshia tridentata	0	1	1	0	-	.15	-	-
Total for Browse		75	87	83	68	8.31	12.97	9.98	11.51

CANOPY COVER, LINE INTERCEPT--

Management unit 17, Study no: 58

Species	Percent Cover		
	'00	'05	'10
Artemisia nova	-	.63	.11
Artemisia tridentata vaseyana	-	1.13	.86
Cercocarpus montanus	.80	10.31	10.16
Chrysothamnus nauseosus graveolens	-	2.93	-
Chrysothamnus nauseosus hololeucus	-	-	2.16
Chrysothamnus viscidiflorus lanceolatus	-	-	.30
Eriogonum corymbosum	-	-	.26
Gutierrezia sarothrae	-	.35	.03
Juniperus osteosperma	1.20	.36	2.70
Pinus edulis	2.79	3.00	2.98

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 17, Study no: 58

Species	Average leader growth (in)	
	'05	'10
Artemisia nova	1.6	.7
Artemisia tridentata vaseyana	2.8	1.5
Cercocarpus montanus	3.6	4.0
Cowania mexicana	2.1	2.2

BASIC COVER--

Management unit 17, Study no: 58

Cover Type	Average Cover %					
	'82	'88	'95	'00	'05	'10
Vegetation	8.25	8.50	25.78	33.96	28.21	29.07
Rock	2.25	2.50	7.89	2.73	1.60	2.05
Pavement	18.00	18.25	8.38	11.82	11.38	14.03
Litter	57.50	59.00	55.12	54.79	45.62	50.52
Cryptogams	0	.25	.24	.22	.03	.04
Bare Ground	14.00	11.50	10.93	14.94	26.13	23.21

SOIL ANALYSIS DATA --

Management unit 17, Study no: 58, Study Name: Buck Knoll

Effective rooting depth (in)	pH	caly loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
12.9	7.4	24.9	47.8	28.3	5.3	5.1	92.8	0.9

PELLET GROUP DATA--

Management unit 17, Study no: 58

Type	Quadrat Frequency			
	'95	'00	'05	'10
Rabbit	5	16	13	3
Horse	5	1	-	-
Elk	12	18	27	36
Deer	7	9	9	9
Cattle	-	-	1	3

Days use per acre (ha)		
'00	'05	'10
-	-	-
-	-	-
26 (65)	64 (157)	14 (35)
6 (15)	19 (46)	7 (17)
3 (7)	5 (13)	4 (11)

BROWSE CHARACTERISTICS--

Management unit 17, Study no: 58

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
Amelanchier utahensis										
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	0	0	0	-	-	0	0	0	63/63	
Artemisia frigida										
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	0	100	-	-	100	0	0	6/12	
Artemisia nova										
82	0	0	0	0	-	0	0	0	-/-	
88	0	0	0	0	-	0	0	0	-/-	
95	40	50	50	0	-	50	0	0	11/20	
00	0	0	0	0	-	0	0	0	7/11	
05	320	50	44	6	20	31	19	0	12/21	
10	260	15	85	0	-	100	0	15	11/22	
Artemisia tridentata vaseyana										
82	66	0	100	-	-	100	0	0	12/6	
88	66	0	100	-	-	0	0	0	31/24	
95	40	0	100	-	-	0	0	0	30/46	
00	100	60	40	-	-	0	0	0	33/46	
05	160	25	75	-	120	38	38	0	30/44	
10	160	38	63	-	20	38	0	0	28/47	

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
Atriplex canescens										
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	11/29	
10	0	0	0	-	-	0	0	0	16/32	
Cercocarpus montanus										
82	465	72	14	14	66	29	71	14	25/33	
88	599	78	22	0	-	0	0	0	44/53	
95	580	14	86	0	-	62	17	0	47/49	
00	620	23	77	0	1080	35	0	0	45/47	
05	800	15	85	0	40	25	65	0	55/50	
10	640	0	100	0	180	16	81	0	50/56	
Chrysothamnus nauseosus graveolens										
82	0	0	0	0	-	0	0	0	-/-	
88	0	0	0	0	-	0	0	0	-/-	
95	780	3	97	0	-	31	0	0	31/42	
00	1200	30	48	22	20	0	0	10	23/29	
05	760	11	79	11	20	0	0	5	29/36	
10	40	0	100	0	-	0	0	0	21/24	
Chrysothamnus nauseosus hololeucus										
82	0	0	0	0	-	0	0	0	-/-	
88	0	0	0	0	-	0	0	0	-/-	
95	20	0	100	0	-	0	0	0	28/26	
00	940	32	66	2	-	0	0	0	4/5	
05	0	0	0	0	-	0	0	0	32/29	
10	680	12	50	38	-	59	0	38	28/29	
Chrysothamnus viscidiflorus lanceolatus										
82	0	0	0	-	-	0	0	0	-/-	
88	133	0	100	-	-	0	0	0	6/4	
95	120	17	83	-	-	0	0	0	10/15	
00	180	0	100	-	-	11	0	0	12/22	
05	0	0	0	-	-	0	0	0	17/22	
10	60	33	67	-	-	0	0	0	13/16	
Cowania mexicana stansburiana										
82	0	0	0	0	-	0	0	0	-/-	
88	0	0	0	0	-	0	0	0	-/-	
95	0	0	0	0	-	0	0	0	-/-	
00	0	0	0	0	-	0	0	0	-/-	
05	0	0	0	0	-	0	0	0	13/17	
10	20	0	0	100	-	0	0	100	23/23	

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
<i>Ephedra viridis</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	21/40	
05	0	0	0	-	-	0	0	0	14/22	
10	0	0	0	-	-	0	0	0	23/21	
<i>Eriogonum corymbosum</i>										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	60	67	33	-	-	0	0	0	16/21	
00	40	0	100	-	-	100	0	0	15/20	
05	60	0	100	-	-	0	0	0	18/27	
10	40	0	100	-	-	50	0	0	14/20	
<i>Gutierrezia sarothrae</i>										
82	599	0	100	0	-	0	0	0	11/19	
88	2332	0	86	14	-	0	0	0	7/4	
95	1820	43	56	1	280	0	0	1	8/8	
00	2760	7	93	0	20	0	0	0	5/4	
05	2240	25	75	0	160	0	0	0	6/7	
10	220	9	73	18	-	0	0	18	7/6	
<i>Juniperus osteosperma</i>										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	-/-	
00	120	83	17	-	-	0	0	0	-/-	
05	60	67	33	-	-	0	0	0	-/-	
10	120	67	33	-	-	0	0	17	-/-	
<i>Leptodactylon pungens</i>										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	-/-	
00	20	0	100	-	-	100	0	0	5/7	
05	0	0	0	-	-	0	0	0	-/-	
10	0	0	0	-	-	0	0	0	-/-	
<i>Pinus edulis</i>										
82	66	100	0	-	-	0	0	100	-/-	
88	66	100	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	-/-	
00	120	50	50	-	40	0	0	0	-/-	
05	120	100	0	-	-	0	0	0	-/-	
10	80	100	0	-	-	0	0	0	-/-	

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
Purshia tridentata										
82	66	100	0	-	-	0	0	0	-/-	
88	66	0	100	-	-	100	0	0	8/6	
95	0	0	0	-	-	0	0	0	-/-	
00	20	0	100	-	-	100	0	0	42/23	
05	20	0	100	-	-	0	100	0	25/22	
10	0	0	0	-	-	0	0	0	-/-	
Sambucus cerulea										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	61/64	
00	0	0	0	-	-	0	0	0	46/53	
05	0	0	0	-	-	0	0	0	58/67	
10	0	0	0	-	-	0	0	0	46/64	