

CUTOFF - TREND STUDY NO. 17-52-10

Vegetation Type: Mountain Big Sagebrush

Range Type: Crucial Deer Winter, Crucial Elk Winter

NRCS Ecological Site Description: Not Available

Land Ownership: Private

Elevation: 7200 ft. (2195 m)

Aspect: West

Slope: 10%

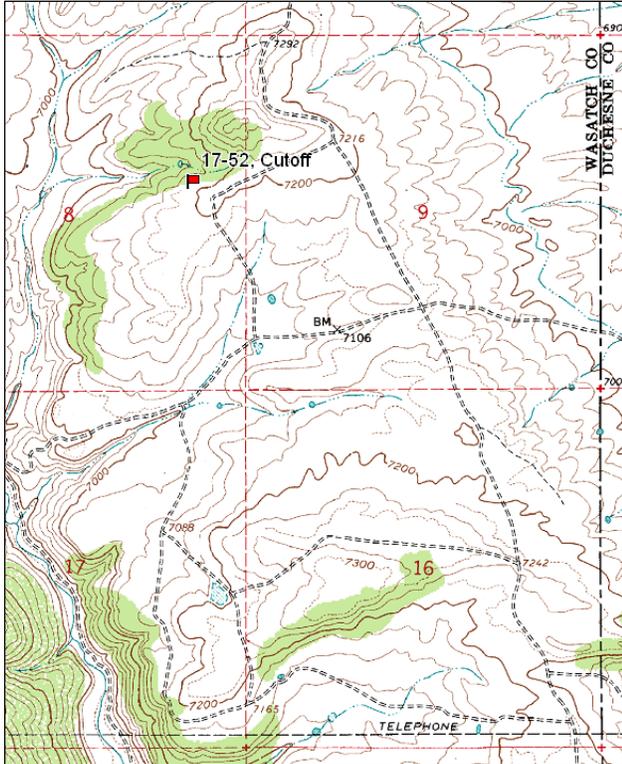
Transect bearing: 179° magnetic

Belt placement: line 1 (6 & 90ft), line 2 (26ft), line 3 (57ft), line 4 (69ft).

Directions:

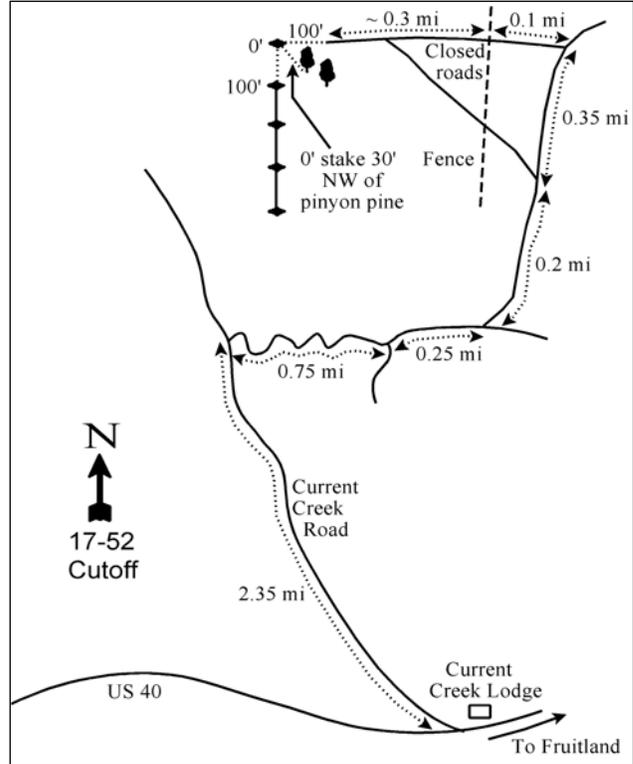
From the intersection of Currant Creek Road and Highway U.S. 40, drive north on the Currant Creek Road for 2.35 miles. Turn right and go east 0.75 miles to an intersection. Turn left and drive north for 0.25 miles to a "T" intersection. At the "T", turn left and go 0.2 miles to a fork. Stay right for another 0.35 miles to another fork. Turn left and drive to the fence. Cross the fence and walk to the end of the road (about a third of a mile) to the west. The 0-foot baseline is 100 feet west of the end of the road and about 30 feet northwest of a mature pinyon pine.

Map Name: Deep Creek Canyon



Township: 3S Range: 9W Section: 8

Diagrammatic Sketch:



GPS: NAD 83, UTM 12T 506921 E 4453859 N

## CUTOFF - TREND STUDY NO. 17-52

### Site Information

Site Description: The study is on private land about one-third of mile west of Utah Division of Wildlife Resources (UDWR) land, immediately north of Currant Creek Lodge. The area is comprised of a mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and grass community with a mixture of mountain brush. Pellet group transect data has indicated heavy use by deer, and light use by elk and cattle since 2000 (Table - Pellet Group Data).

Browse: The key browse species is mountain big sagebrush which provides the majority of the browse cover on the site (Table - Browse Trends). There are also a variety of other browse species present which include: serviceberry (*Amelanchier utahensis*), true mountain mahogany (*Cercocarpus montanus*), mountain low rabbitbrush (*Chrysothamnus viscidiflorus* ssp. *lanceolatus*) and bitterbrush (*Purshia tridentata*). The mountain big sagebrush population is mostly mature with high amounts of decadence and moderate amounts of poor vigor. Utilization of sagebrush has been heavy over the course of the study. Recruitment of young sagebrush plants has been mostly poor, though recruitment of young was good in 1995 and 2010. Serviceberry and true mountain mahogany occur in small numbers, but provide additional forage. Serviceberry shows mostly light to moderate hedging, but some mature individuals have displayed heavy use. Mahogany has shown mostly moderate use from 1982 to 1995, but showed heavy utilization since 2000 (Table - Browse Characteristics).

Herbaceous Understory: Grasses are diverse, but only moderately abundant for this type of community. Thickspike wheatgrass (*Agropyron dasystachyum*), bluebunch wheatgrass (*A. spicatum*), needle-and-thread (*Stipa comata*), Indian ricegrass (*Oryzopsis hymenoides*), Sandberg's bluegrass (*Poa secunda*) and mutton bluegrass (*P. fendleriana*) are the most abundant grass species. It appears that there may have been some identification problems between the two bluegrass species. Forbs are abundant, but few useful species are present. Timber poisonvetch (*Astragalus convallarius*), rose pussytoes (*Antennaria rosea*) and Hood's phlox (*Phlox hoodii*) are the most common perennial forbs (Table - Herbaceous Trends).

Soil: The soil texture is a sandy loam with a neutral soil reaction (pH 7.2). Phosphorus may have limited availability for plant growth and development at 5.9 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). Bare ground cover is fairly high for this type of community, with vegetation and litter cover lower than would be expected (Table - Basic Cover). There is evidence of past erosion in the form of soil pedestaling and gully formation; however, there appears to be sufficient protective ground cover to prevent serious erosion. On nearby steeper slopes, erosion is more serious and widespread than on the study site. The soil erosion condition was classified as stable in 2010, but was moderate in 2005 because of small but frequent pedestaling of shrubs and perennial grasses, small gullies covering between 10% and 50% of the site, some minor soil movement, moderate litter movement, many small rills and minor flow patterns between perennial species.

### Trend Assessments

Browse:

- **1982 to 1988 - slightly down (-1):** There was a slight increase in the density of the primary browse species, mountain big sagebrush, but decadence increased from 21% to 70% of the population. Poor vigor also increased from 0% to 24% and recruitment of young sagebrush plants remained low.
- **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. The decadence of mountain big sagebrush decreased to 39%, but remained high. Recruitment of young plants increased slightly to 16% of the population.
- **1995 to 2000 - stable (0):** There was little change in the density of mountain big sagebrush, though cover decreased from 11% to 7%. Decadence increased slightly to 45%, but poor vigor decreased to 14%. Recruitment of young sagebrush plants decreased to 5%.

- **2000 to 2005 - slightly down (-1):** The density of mountain big sagebrush decreased by 19% from 2,980 plants/acre to 2,420 plants/acre, but cover remained similar. Decadence increased to 51% and poor vigor increased to 17%.
- **2005 to 2010 - up (+2):** The mountain big sagebrush density increased by 21% to 2,940 plants/acre and cover increased from 8% to 9%. Decadence of sagebrush decreased to 16%, though poor vigor increased slightly to 18%. Recruitment of young sagebrush plants increased to 23% of the population.

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 - up (+2):** The sum of nested frequency of perennial grasses increased by 22%.
- **1995 to 2000 - slightly down (-1):** The perennial grass sum of nested frequency decreased by 10%, but cover increased from 10% to 14% due to a large increase in the cover of Sandberg's bluegrass.
- **2000 to 2005 - up (+2):** The sum of nested frequency of perennial grasses increased by 21%, though cover decreased slightly to 11%.
- **2005 to 2010 - slightly down (-1):** The sum of nested frequency of perennial grasses decreased by 15% and cover decreased to 8%.

Forb:

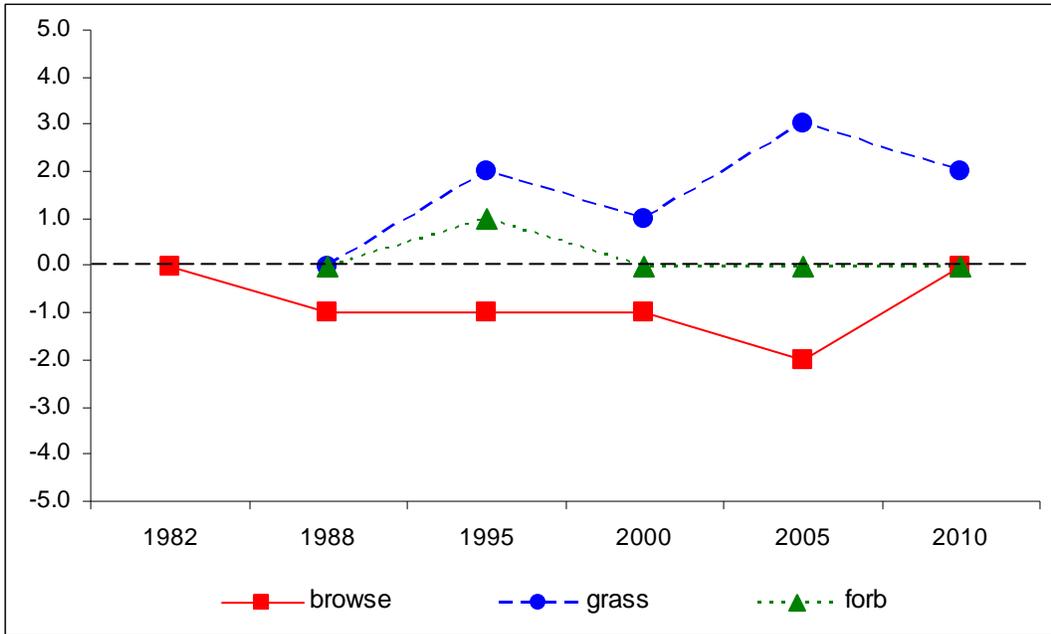
- **1982 to 1988 - no trend (NT):** Only quadrat frequency data for forbs are available from 1982, so no trend was given.
- **1988 to 1995 - slightly up (+1):** The sum of nested frequency of perennial forbs increased by 12%.
- **1995 to 2000 - slightly down (-1):** The perennial forb sum of nested frequency decreased by 15%, but cover increased from 9% to 11%.
- **2000 to 2005 - stable (0):** There was little change in the sum of nested frequency of perennial forbs, though cover decreased to 8%.
- **2005 to 2010 - stable (0):** The sum of nested frequency of perennial forbs remained similar, but cover increased to 15%.

DEER DESIRABLE COMPONENTS INDEX - MID-LEVEL POTENTIAL SCALE --  
Management unit 17, study no: 52

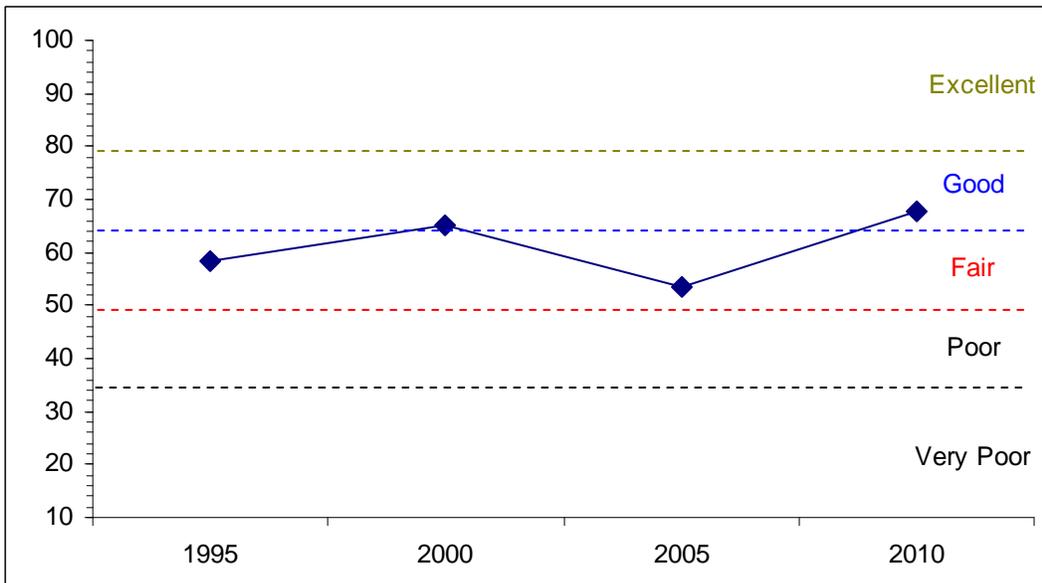
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
95	16.6	5.6	7.3	19.0	0.0	10.0	0.0	<b>58.5</b>	Fair
00	14.3	5.7	7.9	27.2	0.0	10.0	0.0	<b>65.0</b>	Fair-Good
05	14.4	3.6	3.8	21.8	-0.1	10.0	0.0	<b>53.4</b>	Fair
10	17.2	11.7	12.6	16.2	0.0	10.0	0.0	<b>67.7</b>	Good

## Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--  
Management unit 17, Study no: 52



DEER DESIRABLE COMPONENTS INDEX TREND, MID-LEVEL POTENTIAL--  
Management unit 17, Study no: 52



HERBACEOUS TRENDS--  
Management unit 17, Study no: 52

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
G	<i>Agropyron dasystachyum</i>	b181	a203	bc163	c85	bc168	2.23	2.68	2.03	2.33
G	<i>Agropyron intermedium</i>	-	-	-	-	1	-	-	-	.03
G	<i>Agropyron spicatum</i>	a-	b32	b46	c148	b34	1.14	1.20	1.75	.48
G	<i>Bromus tectorum</i> (a)	-	3	3	11	5	.00	.00	.19	.01
G	<i>Carex</i> sp.	a3	c46	bc44	bc34	ab21	.27	.29	.13	.17
G	<i>Elymus salina</i>	a39	b67	a21	a12	a15	.99	.82	.07	.16
G	<i>Oryzopsis hymenoides</i>	c145	b79	b67	ab50	a20	1.20	1.80	1.12	.13
G	<i>Poa fendleriana</i>	c148	c118	a8	b66	a28	1.35	.21	1.34	.38
G	<i>Poa secunda</i>	a-	a7	b199	c171	c202	.01	6.15	2.21	3.01
G	<i>Sitanion hystrix</i>	-	1	-	-	2	.00	-	-	.00
G	<i>Stipa comata</i>	a-	c74	b14	d111	cd83	2.25	.42	2.20	1.37
Total for Annual Grasses		0	3	3	11	5	0.00	0.00	0.19	0.00
Total for Perennial Grasses		516	627	562	677	574	9.48	13.59	10.89	8.09
Total for Grasses		516	630	565	688	579	9.48	13.60	11.08	8.10
F	<i>Agoseris glauca</i>	a-	ab3	a-	b8	ab2	.01	-	.02	.01
F	<i>Allium</i> sp.	a-	c104	a-	b61	b47	.45	-	.24	.16
F	<i>Androsace septentrionalis</i> (a)	-	b35	a-	a-	a8	.14	-	-	.02
F	<i>Antennaria rosea</i>	bc68	b48	b60	a12	c98	.52	2.10	.33	3.54
F	<i>Arabis</i> sp.	ab6	b5	b9	c24	a-	.02	.22	.10	-
F	<i>Artemisia dracunculus</i>	-	-	2	-	-	-	.00	-	-
F	<i>Aster</i> sp.	-	-	-	-	3	-	-	-	.00
F	<i>Astragalus convallarius</i>	a83	b139	b122	b131	a83	3.79	3.19	2.83	2.34
F	<i>Astragalus</i> sp.	4	3	8	2	1	.62	.44	.01	.15
F	<i>Calochortus nuttallii</i>	a-	ab3	ab2	b8	ab4	.01	.00	.02	.02
F	<i>Castilleja chromosa</i>	a4	a4	b23	a3	a6	.07	.27	.00	.06
F	<i>Chaenactis douglasii</i>	b25	ab9	ab7	a1	a-	.02	.02	.00	-
F	<i>Chenopodium fremontii</i> (a)	-	6	-	-	1	.01	-	-	.00
F	<i>Chenopodium leptophyllum</i> (a)	-	b11	a-	ab6	b10	.03	-	.01	.05
F	<i>Cirsium</i> sp.	2	-	2	-	-	-	.00	-	-
F	<i>Collinsia parviflora</i> (a)	-	c62	a-	ab99	b11	.22	-	.57	.04
F	<i>Comandra pallida</i>	a-	a-	a-	a-	b12	-	-	-	.05
F	<i>Cordylanthus kingii</i> (a)	-	b81	a3	c119	c117	2.25	.00	2.91	2.28
F	<i>Crepis acuminata</i>	a-	b9	ab2	a-	ab6	.19	.00	-	.03
F	<i>Cryptantha</i> sp.	3	-	-	-	3	-	-	.00	.03
F	<i>Cymopterus</i> sp.	a-	b24	a4	ab14	b29	.07	.00	.05	.17
F	<i>Delphinium nuttallianum</i>	-	-	-	1	-	-	-	.00	-
F	<i>Descurainia pinnata</i> (a)	-	a10	a-	b25	a-	.07	-	.09	-
F	<i>Erigeron eatonii</i>	a-	a-	a-	b15	c19	-	-	.42	.19
F	<i>Erigeron pumilus</i>	a36	a27	b85	ab56	a42	.07	.51	.51	.54
F	<i>Eriogonum cernuum</i> (a)	-	3	-	1	1	.01	-	.00	.00
F	<i>Gayophytum ramosissimum</i> (a)	-	7	-	11	9	.06	-	.02	.04
F	<i>Hedysarum boreale</i>	a-	b30	a4	a-	a-	.61	.01	-	-
F	<i>Lappula occidentalis</i> (a)	-	bc19	a-	c24	b8	.05	-	.06	.02

Type	Species	Nested Frequency					Average Cover %			
		'88	'95	'00	'05	'10	'95	'00	'05	'10
F	Lithospermum ruderales	1	3	2	2	3	.03	.03	.06	.03
F	Machaeranthera canescens	b151	a19	a12	a15	a7	.08	.08	.20	.04
F	Penstemon sp.	-	2	1	-	-	.00	.01	-	-
F	Phlox hoodii	b142	a108	ab131	a108	b142	1.58	3.62	2.79	5.92
F	Phlox longifolia	a-	b30	b15	b29	ab13	.12	.03	.21	.09
F	Polygonum douglasii (a)	-	bc53	a8	c61	b36	.13	.04	.14	.13
F	Ranunculus testiculatus (a)	-	-	-	4	3	-	-	.01	.01
F	Schoenocrambe linifolia	a-	ab5	ab3	ab1	b9	.01	.00	.03	.02
F	Senecio multilobatus	-	-	6	5	-	-	.03	.03	-
F	Sphaeralcea coccinea	b55	ab31	ab32	a31	a28	.45	.23	.15	.45
F	Trifolium gymnocarpon	a5	c50	ab29	bc30	c47	.24	.13	.22	.63
Total for Annual Forbs		0	287	11	350	204	3.00	0.04	3.84	2.62
Total for Perennial Forbs		585	656	561	557	604	9.00	10.99	8.29	14.54
Total for Forbs		585	943	572	907	808	12.00	11.04	12.13	17.16

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

#### BROWSE TRENDS--

Management unit 17, Study no: 52

Type	Species	Strip Frequency				Average Cover %			
		'95	'00	'05	'10	'95	'00	'05	'10
B	Amelanchier utahensis	16	19	20	18	.82	2.40	.91	2.40
B	Artemisia tridentata vaseyana	78	70	69	75	10.52	7.12	7.80	8.91
B	Ceratoides lanata	0	4	3	3	-	-	-	-
B	Cercocarpus montanus	7	8	8	9	.56	.68	.72	.30
B	Chrysothamnus depressus	28	29	32	29	1.13	.61	1.75	1.62
B	Chrysothamnus nauseosus	0	0	0	1	-	-	-	-
B	Chrysothamnus viscidiflorus lanceolatus	37	31	35	37	.31	.78	.87	.64
B	Eriogonum corymbosum	18	18	17	16	.30	.27	.45	.43
B	Juniperus osteosperma	0	0	1	1	-	-	-	-
B	Opuntia fragilis	15	8	15	10	.14	.19	.09	.06
B	Pediocactus simpsonii	0	5	8	2	-	-	.03	.03
B	Tetradymia canescens	6	4	4	3	.33	.76	.30	.30
Total for Browse		205	196	212	204	14.14	12.83	12.95	14.71

CANOPY COVER, LINE INTERCEPT--

Management unit 17, Study no: 52

Species	Percent Cover	
	'05	'10
<i>Amelanchier utahensis</i>	3.34	3.48
<i>Artemisia tridentata vaseyana</i>	11.25	11.94
<i>Ceratoides lanata</i>	.03	-
<i>Cercocarpus montanus</i>	1.91	1.56
<i>Chrysothamnus depressus</i>	1.81	2.43
<i>Chrysothamnus viscidiflorus lanceolatus</i>	3.28	1.91
<i>Eriogonum corymbosum</i>	.86	.70
<i>Opuntia fragilis</i>	.11	.11
<i>Pediocactus simpsonii</i>	.06	.05
<i>Tetradymia canescens</i>	.11	.15

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 17, Study no: 52

Species	Average leader growth (in)	
	'05	'10
<i>Amelanchier uthahensis</i>	3.2	2.7
<i>Artemisia tridentata vaseyana</i>	1.4	1.3
<i>Cercocarpus montanus</i>	3.8	3.1

BASIC COVER--

Management unit 17, Study no: 52

Cover Type	Average Cover %					
	'82	'88	'95	'00	'05	'10
Vegetation	11.50	13.00	32.34	37.61	37.54	37.50
Rock	.75	1.25	.20	.89	.53	.50
Pavement	.75	.25	.26	.62	1.40	.12
Litter	45.00	38.50	35.52	40.88	30.97	31.01
Cryptogams	2.75	1.00	5.24	1.69	1.84	.17
Bare Ground	39.25	46.00	34.07	38.95	41.66	49.84

SOIL ANALYSIS DATA --

Management unit 17, Study no: 52, Study Name: Cutoff

Effective rooting depth (in)	pH	sandy loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
13.8	7.2	61.4	19.0	19.6	1.8	5.9	131.2	0.7

PELLET GROUP DATA--

Management unit 17, Study no: 52

Type	Quadrat Frequency			
	'95	'00	'05	'10
Rabbit	25	38	75	16
Elk	3	14	14	6
Deer	44	33	50	38
Cattle	-	-	3	2

Days use per acre (ha)		
'00	'05	'10
-	-	-
8 (20)	16 (40)	22 (55)
96 (236)	86 (212)	60 (147)
3 (7)	11 (27)	9 (22)

BROWSE CHARACTERISTICS--  
Management unit 17, Study no: 52

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	<b>133</b>	0	100	0	-	100	0	0	16/22
88	<b>199</b>	100	0	0	399	0	0	0	-/-
95	<b>320</b>	19	81	0	-	38	0	0	22/26
00	<b>520</b>	54	42	4	140	4	15	4	28/31
05	<b>540</b>	59	30	11	-	44	15	0	33/38
10	<b>380</b>	53	47	0	20	21	0	0	25/30
<i>Artemisia tridentata vaseyana</i>									
82	<b>1864</b>	4	75	21	-	46	0	0	18/26
88	<b>2199</b>	6	24	70	-	39	0	24	18/23
95	<b>3000</b>	16	45	39	20	28	47	21	20/34
00	<b>2980</b>	5	50	45	20	28	53	14	20/33
05	<b>2420</b>	4	45	51	2760	21	55	17	22/35
10	<b>2940</b>	23	61	16	2040	22	48	18	22/34
<i>Ceratoides lanata</i>									
82	<b>66</b>	0	100	0	-	0	0	0	14/9
88	<b>0</b>	0	0	0	-	0	0	0	-/-
95	<b>0</b>	0	0	0	-	0	0	0	6/8
00	<b>120</b>	0	83	17	-	83	0	17	7/6
05	<b>80</b>	0	100	0	-	75	25	0	13/12
10	<b>80</b>	0	100	0	-	25	50	0	6/9
<i>Cercocarpus montanus</i>									
82	<b>199</b>	0	100	0	-	100	0	0	20/19
88	<b>399</b>	100	0	0	66	100	0	0	-/-
95	<b>260</b>	8	92	0	-	38	0	0	22/31
00	<b>260</b>	8	85	8	-	23	77	8	32/32
05	<b>240</b>	0	92	8	-	0	100	8	41/45
10	<b>260</b>	0	100	0	40	46	54	0	36/35
<i>Chrysothamnus depressus</i>									
82	<b>0</b>	0	0	0	-	0	0	0	-/-
88	<b>665</b>	10	90	0	-	0	0	0	3/6
95	<b>2520</b>	2	98	0	-	0	0	0	6/11
00	<b>2480</b>	0	99	1	-	32	19	.80	5/10
05	<b>2460</b>	0	94	6	20	16	77	7	7/14
10	<b>2240</b>	1	98	1	-	51	6	.89	5/10

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
<b>Chrysothamnus nauseosus</b>										
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	7/15	
05	0	0	0	-	-	0	0	0	-/-	
10	20	0	100	-	-	0	0	0	5/10	
<b>Chrysothamnus viscidiflorus lanceolatus</b>										
82	1533	0	100	0	-	0	0	0	12/15	
88	3132	11	79	11	-	0	0	4	8/8	
95	1480	8	92	0	-	0	0	0	11/14	
00	1640	1	99	0	-	5	0	1	9/13	
05	1480	0	96	4	-	18	5	1	11/18	
10	1880	7	93	0	20	3	0	0	11/17	
<b>Eriogonum corymbosum</b>										
82	733	0	100	0	-	0	0	0	17/15	
88	732	45	18	36	-	0	0	0	13/11	
95	800	20	80	0	-	0	0	0	13/18	
00	720	14	53	33	40	11	0	3	11/15	
05	820	17	78	5	100	20	29	0	16/21	
10	640	3	94	3	20	0	0	3	14/18	
<b>Juniperus osteosperma</b>										
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	20	100	0	-	-	0	0	0	-/-	
10	20	100	0	-	-	0	0	0	-/-	
<b>Opuntia fragilis</b>										
82	199	0	100	0	-	0	0	0	3/5	
88	998	33	47	20	533	0	0	0	1/2	
95	340	18	76	6	-	0	0	6	4/11	
00	420	0	95	5	-	5	0	5	2/6	
05	440	5	82	14	-	0	0	5	3/8	
10	260	31	62	8	-	0	0	15	3/11	
<b>Pediocactus simpsonii</b>										
82	0	0	0	-	-	0	0	0	-/-	
88	0	0	0	-	-	0	0	0	-/-	
95	0	0	0	-	-	0	0	0	-/-	
00	140	0	100	-	-	0	0	0	1/2	
05	240	0	100	-	-	0	0	0	2/3	
10	60	0	100	-	-	0	0	0	1/3	

		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>Purshia tridentata</i>										
82	<b>66</b>	0	100	-	-	100	0	0	14/30	
88	<b>133</b>	0	100	-	-	50	0	0	19/39	
95	<b>0</b>	0	0	-	-	0	0	0	-/-	
00	<b>0</b>	0	0	-	-	0	0	0	-/-	
05	<b>0</b>	0	0	-	-	0	0	0	-/-	
10	<b>0</b>	0	0	-	-	0	0	0	-/-	
<i>Quercus gambelii</i>										
82	<b>0</b>	0	0	-	-	0	0	0	-/-	
88	<b>0</b>	0	0	-	-	0	0	0	-/-	
95	<b>0</b>	0	0	-	-	0	0	0	-/-	
00	<b>0</b>	0	0	-	-	0	0	0	-/-	
05	<b>0</b>	0	0	-	-	0	0	0	51/16	
10	<b>0</b>	0	0	-	-	0	0	0	-/-	
<i>Symphoricarpos oreophilus</i>										
82	<b>0</b>	0	0	-	-	0	0	0	-/-	
88	<b>0</b>	0	0	-	-	0	0	0	-/-	
95	<b>0</b>	0	0	-	-	0	0	0	-/-	
00	<b>0</b>	0	0	-	-	0	0	0	10/32	
05	<b>0</b>	0	0	-	-	0	0	0	13/30	
10	<b>0</b>	0	0	-	-	0	0	0	16/24	
<i>Tetradymia canescens</i>										
82	<b>199</b>	0	100	0	-	0	0	0	8/15	
88	<b>66</b>	0	100	0	-	0	0	0	6/6	
95	<b>140</b>	0	100	0	-	14	0	0	11/17	
00	<b>80</b>	0	100	0	-	25	0	0	11/17	
05	<b>80</b>	0	75	25	-	75	0	0	11/20	
10	<b>100</b>	0	100	0	20	20	20	0	9/14	