

Trend Study 10R-7-05

Study site name: Monument Ridge.

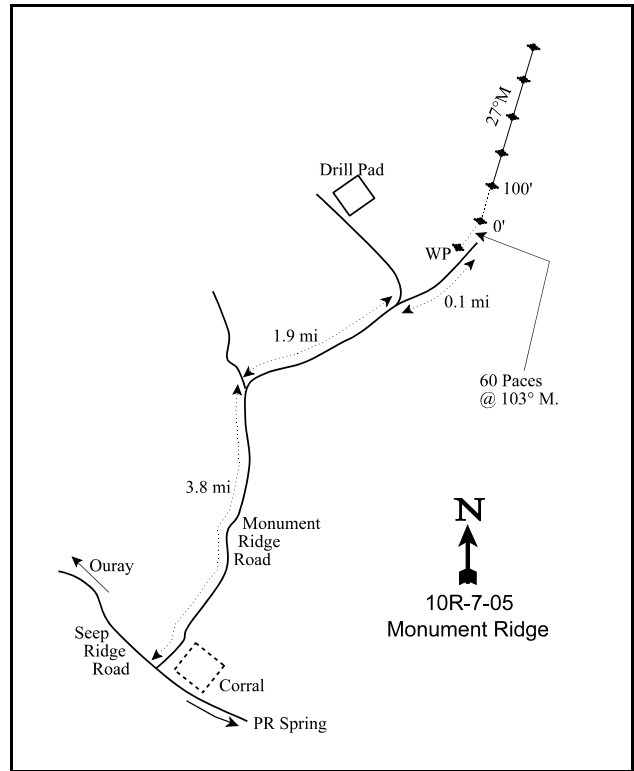
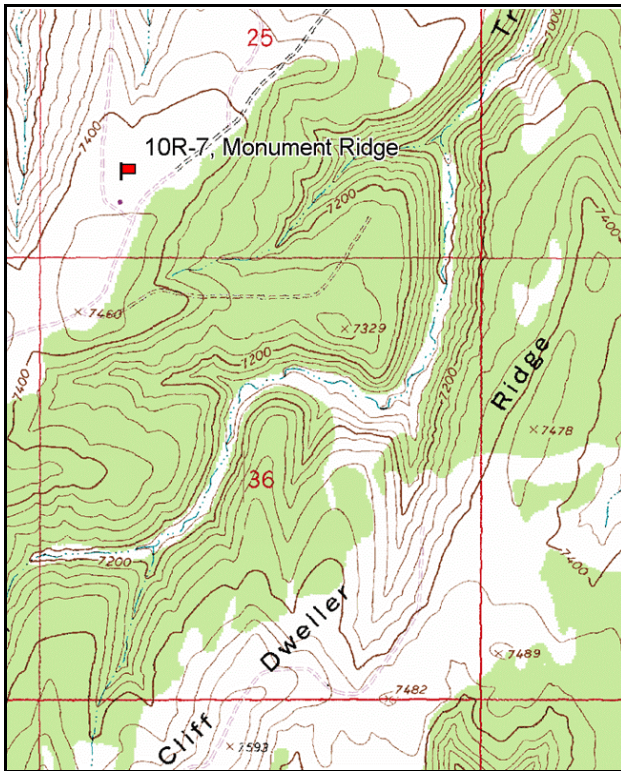
Vegetation Type: Chained-Burn.

Compass bearing: frequency baseline 27 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From Seep Ridge Road turn north onto Monument Ridge Road. Drive 3.8 miles to a fork. Take the right fork and travel 1.9 miles to a turnoff to a drill pad. Go straight past this turnoff 0.1 miles to a witness post on the left (north) side of the road. From the witness post walk 60 paces at 103°M to the 0-foot stake. The study is marked by green, steel fencepost approximately 12-18 inches in height. The 0' stake is marked with browse tag #88 DWR.



Map name: Seep Canyon.

Diagrammatic Sketch

Township 14S, Range 23E, Section 25

GPS: NAD 27, UTM 12S 4380795 N, 646308 E

DISCUSSION

Monument Ridge - Trend Study 10R-7

The Monument Ridge study is located about 2.5 miles from the Monument Ridge Road at the head of Monument Canyon which drains into Sweetwater Canyon. The area was chained and seeded in the 1960's. In the 1980's, a wild fire burned through the area removing the most of chaining debris. Pinyon and juniper trees are becoming reestablished. The study area is at an elevation of 7,450 feet. It is almost level with canyons sloping off to the east and west. A drill pad is located to the southwest of the site. The area is used heavily by elk in the fall and spring. The BLM allows cattle grazing as part of the Sweetwater allotment which permits grazing from May 1 through October 31 on a deferred rest rotation basis. Pellet group data from 1997 was estimated at 166 elk days use/acre and 20 cow days use/acre (410 edu/ha and 50 cdu/ha). In 2000, elk use was much lower at 72 days use/acre (178 edu/ha). No cattle use was noted, although deer use was estimated at 11 days use/acre (27 ddu/ha). Data from 2005 estimated 94 elk, 9 deer, and 12 cow days use/acre (231 edu/ha, 23 ddu/ha, and 29 cdu/ha).

Soil at the site is moderately shallow with an average effective rooting depth of about 14 inches. A rocky layer is found about 6 inches below the soil surface. The deepest soil measurements are characteristically associated with the stumps of dead juniper and pinyon trees, while areas of bare soil are indicative of very shallow soils (2-3 inches) above bed rock. In 2005 it was noted that there were some shallow rills on the site. Pedestalizing was noted around all the vegetation. Movement of sediment was low on the site due to the gentle terrain. Erosion was rated as slight.

Preferred browse are limited to a few scattered mountain big sagebrush, mountain mahogany, and rubber rabbitbrush. Preferred browse species are not abundant enough to provide winter forage for wildlife species. Broom snakeweed and rubber rabbitbrush have had the highest cover for browse species. Broom snakeweed cover has been 1-2% at each reading. This species had an estimated density of 15,900 plants/acre in 1997, 14,320 in 2000, and declined to 8,120 in 2005. Although broom snakeweed is quite dense, it does not dominate the site. Pinyon and juniper trees are scattered over the site. Density was estimated at 14 trees/acre in 2000. Average diameter of pinyon was one inch and juniper was nearly two inches.

Most of the vegetation cover is contributed by crested wheatgrass. In 2005, it provided 98% of the grass cover, 90% of the herbaceous cover, and 82% of the total vegetation cover. Crested wheatgrass had 27% ground cover in 2005. It has been sampled in 99% of the quadrats each year the site has been read. Several other grasses occur on the site in small numbers. Forbs are diverse but only a few species are abundant. Tufted milkvetch (*Astragalus spatulatus*) and scarlet globe mallow were the most abundant forbs each year.

1997 APPARENT TREND ASSESSMENT

This site was chained in the 1960's and a wildfire burned through it in the 1980's. The study is located on a level area. This, combined with adequate protective cover, is enough to prevent erosion. The soil is moderately shallow and in some places does not allow vegetation to become established. The deepest soil is found near the stumps of burned juniper and pinyon. The dominant browse species is broom snakeweed. Although the density is estimated at 15,900 plants/acre, these plants are very small averaging only 5 inches in height and crown. Mountain big sagebrush is present, but in very low numbers. Not many seedlings were found for any browse species. Herbaceous cover is dominated by crested wheatgrass. This species offers good forage and supplies most of the protective ground cover. Other native perennial grasses are present, but in low abundance. The dominant forb is tufted milkvetch, with other forbs providing very little cover. The Desirable Components Index (see methods) rated this site as poor due to the lack of a significant browse component.

winter range condition (DC Index) - poor (34) Mid-level potential scale

2000 TREND ASSESSMENT

Trend for soil is slightly down. When examined on a relative scale percent cover of bare ground increased and percent litter cover decreased from 30% to 24%. The ratio of bare ground to protective ground cover (vegetation, litter, and cryptogams) has decreased. Due to the levelness of the site, combined with the good protective ground cover, erosion is not a problem. Trend for browse is stable but in poor condition due to a lack of preferred shrubs combined with the abundance of the increaser, broom snakeweed. Trend for the herbaceous understory is down slightly. Sum of nested frequency for both grasses and forbs declined slightly since 1997. In addition, nested frequency of crested wheatgrass and several forb species declined significantly. The DCI score remained at poor, although it improved slightly due to higher perennial grass and forb cover.

TREND ASSESSMENT

soil - slightly down (-1)

browse - stable (0)

herbaceous understory - slightly down (-1)

winter range condition (DC Index) - poor (41) Mid-level potential scale

2005 TREND ASSESSMENT

The soil trend is slightly down. The ratio of bare ground to protective ground cover (vegetation, litter, and cryptogams) decreased. Relative percent bare ground increased from 27% in 2000 to 36% in 2005. An erosion condition class assessment rated erosion as slight. The browse trend continues to be stable. There has been very little change for any preferred browse species. A few mountain big sagebrush seedlings were found in 2005. Broom snakeweed density did decline significantly, but cover was unchanged. The herbaceous understory trend is stable. Sum of nested frequency for perennial grasses increased slightly. Grass cover was also much higher. Nested frequency of forbs declined sharply after many years of drought. Tufted milkvetch was significantly less abundant, but is not an important forage species. The DCI score remained at poor.

TREND ASSESSMENT

soil - slightly down (-1)

browse - stable (0)

herbaceous understory - stable (0)

winter range condition (DC Index) - poor (37) Mid-level potential scale

HERBACEOUS TRENDS --

Management unit 10R, Study no: 7

Type	Species	Nested Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
G	Agropyron cristatum	_b 444	_a 405	_a 410	12.07	16.14	26.90
G	Agropyron dasystachyum	5	2	-	.01	.03	-
G	Bouteloua gracilis	5	-	-	.04	-	-
G	Carex sp.	13	20	14	.24	.30	.13
G	Oryzopsis hymenoides	_{ab} 6	_a 2	_b 15	.06	.03	.26
G	Poa fendleriana	_b 22	_a -	_a 7	.19	-	.02
G	Poa secunda	3	1	1	.01	.00	.00

Type	Species	Nested Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
G	<i>Stipa comata</i>	5	-	3	.03	-	.15
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		503	430	450	12.67	16.52	27.46
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F	<i>Antennaria rosea</i>	_a 2	_b 13	_{ab} 5	.01	.08	.07
F	<i>Arabis</i> sp.	_b 37	_a 17	_a 2	.12	.06	.00
F	<i>Artemisia dracunculus</i>	_a 5	_b 26	_{ab} 12	.09	.61	.07
F	<i>Arenaria fendleri</i>	-	5	2	-	.03	.01
F	<i>Astragalus spatulatus</i>	_b 155	_b 162	_a 53	2.37	5.93	1.18
F	<i>Aster</i> sp.	13	-	2	.19	-	.00
F	<i>Cryptantha</i> sp.	7	-	-	.02	-	-
F	<i>Descurainia pinnata</i> (a)	3	-	-	.01	-	-
F	<i>Erigeron</i> sp.	_b 46	_a 17	_a 11	.45	.04	.09
F	<i>Hymenoxys acaulis</i>	-	7	1	-	.01	.00
F	<i>Machaeranthera grindelioides</i>	_a -	_b 9	_a -	-	.05	.03
F	<i>Penstemon pachyphyllus</i>	_b 28	_b 28	_a -	.13	.41	-
F	<i>Phlox longifolia</i>	1	2	-	.00	.00	-
F	<i>Schoenocrambe linifolia</i>	10	-	3	.04	-	.00
F	<i>Senecio multilobatus</i>	-	3	-	-	.01	-
F	<i>Sphaeralcea coccinea</i>	106	67	81	.74	.36	.89
F	<i>Taraxacum officinale</i>	-	1	-	-	.00	-
F	<i>Tragopogon dubius</i>	-	3	-	-	.01	-
Total for Annual Forbs		3	0	0	0.00	0	0
Total for Perennial Forbs		410	360	172	4.18	7.65	2.36
Total for Forbs		413	360	172	4.19	7.65	2.36

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

BROWSE TRENDS --

Management unit 10R, Study no: 7

Type	Species	Strip Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
B	Artemisia frigida	14	24	12	.14	.09	.09
B	Artemisia tridentata vaseyana	6	6	5	.18	.03	.07
B	Cercocarpus montanus	3	2	2	-	-	-
B	Chrysothamnus depressus	1	0	0	.00	-	-
B	Chrysothamnus nauseosus hololeucus	1	5	3	.30	.76	1.25
B	Gutierrezia sarothrae	97	96	87	2.33	1.76	1.46
B	Opuntia sp.	0	0	1	-	-	.03
Total for Browse		122	133	110	2.96	2.65	2.91

CANOPY COVER, LINE INTERCEPT --

Management unit 10R, Study no: 7

Species	Percent Cover
	'05
Artemisia frigida	.05
Artemisia tridentata vaseyana	.26
Chrysothamnus nauseosus hololeucus	.26
Gutierrezia sarothrae	1.39

KEY BROWSE ANNUAL LEADER GROWTH --

Management unit 10R, Study no: 7

Species	Average leader growth (in)
	'05
Artemisia tridentata vaseyana	2.7
Cercocarpus montanus	1.8

BASIC COVER --

Management unit 10R, Study no: 7

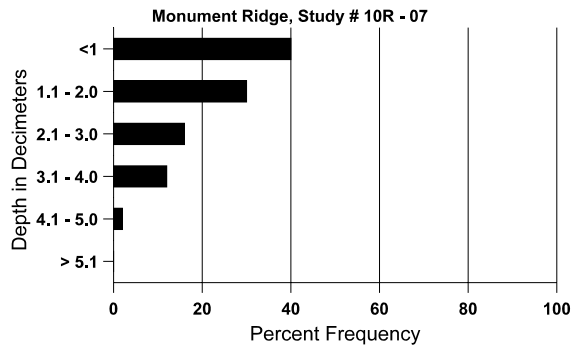
Cover Type	Average Cover %		
	'97	'00	'05
Vegetation	23.26	32.34	31.30
Rock	7.60	7.85	6.38
Pavement	8.05	1.02	3.75
Litter	24.22	23.26	28.67
Cryptogams	3.00	6.57	.29
Bare Ground	13.55	26.27	39.65

SOIL ANALYSIS DATA --

Herd Unit 10R, Study no: 07, Study Name: Monument Ridge

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	ppm P	ppm K	dS/m
13.5	58.8 (13.8)	7.0	40.0	35.4	24.6	3.54	5.0	115.2	3.3

Stoniness Index



PELLET GROUP DATA --

Management unit 10R, Study no: 7

Type	Quadrat Frequency		
	'97	'00	'05
Rabbit	1	10	53
Elk	53	65	78
Deer	2	5	25
Cattle	1	1	11

Days use per acre (ha)	
'00	'05
-	-
72 (177)	94 (231)
11 (29)	9 (23)
-	12 (29)

BROWSE CHARACTERISTICS --
Management unit 10R, Study no: 7

		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>												
97	380	40	160	200	20	-	0	0	5	5	5	7/8
00	620	40	260	340	20	-	0	0	3	3	3	3/5
05	380	40	100	280	-	-	0	0	0	-	0	4/4
<i>Artemisia tridentata vaseyana</i>												
97	120	20	60	60	-	-	33	0	-	-	0	15/22
00	160	-	60	100	-	-	50	13	-	-	0	13/21
05	140	80	-	140	-	-	14	57	-	-	0	16/26
<i>Cercocarpus montanus</i>												
97	60	-	-	40	20	-	0	100	33	-	0	23/37
00	40	-	-	-	40	-	50	50	100	50	50	39/43
05	60	-	20	20	20	-	0	100	33	-	0	33/39
<i>Chrysothamnus depressus</i>												
97	20	-	-	20	-	-	0	0	-	-	0	-/-
00	0	-	-	-	-	-	0	0	-	-	0	-/-
05	0	-	-	-	-	-	0	0	-	-	0	-/-
<i>Chrysothamnus nauseosus hololeucus</i>												
97	20	-	-	-	20	-	0	0	100	-	0	15/20
00	120	-	80	-	40	-	0	0	33	17	17	24/33
05	80	-	-	80	-	100	0	25	0	-	0	22/26
<i>Gutierrezia sarothrae</i>												
97	15900	140	3100	12800	-	420	0	0	0	-	0	5/5
00	14320	180	2180	11600	540	580	0	0	4	2	2	4/5
05	8120	2020	2820	5140	160	240	0	0	2	1	1	5/6
<i>Opuntia sp.</i>												
97	0	-	-	-	-	-	0	0	-	-	0	-/-
00	0	-	-	-	-	-	0	0	-	-	0	-/-
05	20	-	-	20	-	-	0	0	-	-	0	4/3