

Trend Study 16C-14-04

Study site name: Red Point .

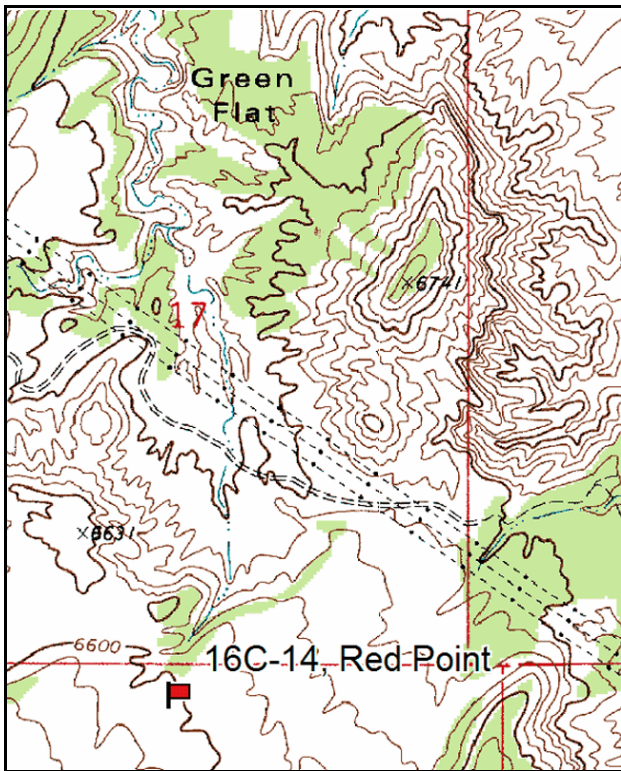
Vegetation type: Chained, Seeded P-J .

Compass bearing: frequency baseline 170 degrees magnetic.

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

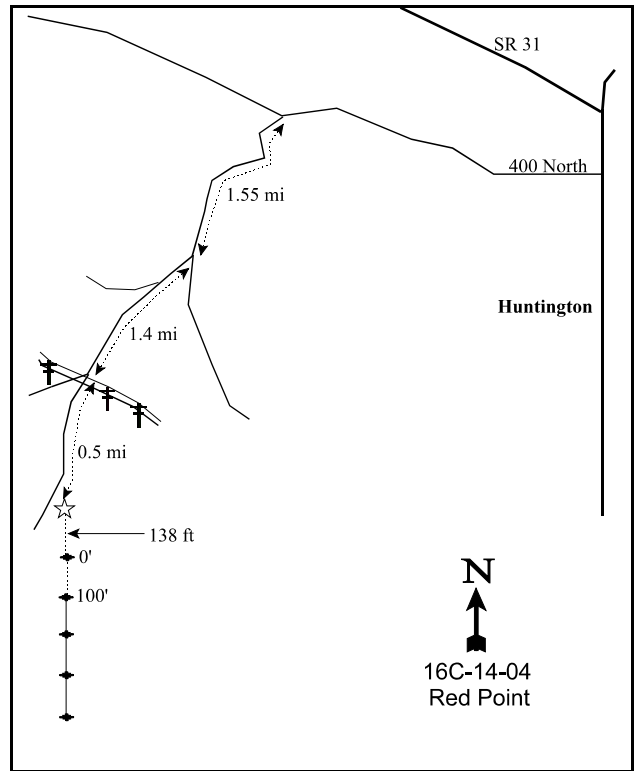
LOCATION DESCRIPTION

From Main Street in Huntington, go west on 400 North. Pass the old mill on the edge of town, cross the canal and continue 0.75 miles. Turn left off the old Huntington River road at a major fork. Proceed 1.55 miles, turn right, and go through a gate. Continue straight 0.2 miles to another fork and stay left for 1 mile. From here, stay straight, passing a trough, for an additional 0.2 miles to a two-way fork. Turn left and go 0.5 miles to a witness post on the left side of the road in the chaining. The frequency baseline start 138 feet south of the witness post. The 18" tall fencepost marking the 0-foot baseline has browse tag #9012 attached.



Map Name: Red Point

Township 17S , Range 8E , Section 20



Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4353803 N, 495895 E

## DISCUSSION

### Red Point - Trend Study No. 16C-14

This trend study is located in a chaining at the base of East Mountain, below the prominent Red Point. The 300 acre bench was chained and seeded in 1973. The large bench where the study is located slopes gradually (8-9%) to the northeast. Elevation is 6,400 feet. Overall declining trends and poor range condition observed in the West Huntington allotment led the BLM to recommend changes in grazing, eventually resulting in a 50% reduction in spring AUMs and closure of one pasture. As part of the Huntington Canyon winter range, deer and elk utilize the area in winter. Pellet group data from 1999 estimated 25 deer, 55 elk, and 4 cow days use/acre (62 ddu/ha, 136 edu/ha, 10 cdu/ha). All cow sign appeared to be from the previous season. Some of the deer pellet groups were fresh and about 12 deer were observed near the site in 1999. All elk pellet groups appeared to be from winter use. Rabbits are common and several Cottontails were seen. Pellet group data from 2004 estimated 38 elk and 31 deer days use/acre (94 edu/ha and 76 ddu/ha). Most of the pellet groups appeared to be from winter use. Cattle use was low, estimated at only 4 days use/acre (11 cdu/ha).

Soil at the site is relatively deep with the effective rooting depth estimated at 16 inches. Soil texture is a loam with a slightly alkaline pH of 7.6. Phosphorus is low at 4.1 ppm. Values below 10 ppm may limit normal plant growth and development. There are large numbers of boulders, smaller rocks, and pavement on the surface. These rocks are mostly sandstone and many have white calcite deposits. Rock and pavement had an average cover value of 27% in 1999 and 26% in 2004. Litter is moderately abundant and consists mostly of large chaining debris. Some localized soil erosion is occurring and soil pedestalling, litter movement, flow patterns and gullies are evident. The erosion condition class was determined to be slight in 2004.

An even-aged stand of surviving pinyon and juniper have regrown on the chained bench. Point-center quarter data from 1999 estimated 141 pinyon/acre and 99 juniper/acre. In 2004, density was estimated at 149 pinyon/acre and 90 juniper/acre. Average diameter of pinyon was estimated at 2.5 inches in 1999 and increased to 3.3 inches in 2004. Juniper diameter averaged 1.8 inches in 1999 and 2.6 inches in 2004. In 2004, about 60% of the pinyon and 68% of the juniper were in the 4 to 8 foot height range. Density of pinyon has slowly increased since 1994 while juniper has remained more stable. Average cover has steadily increased since 1994 and pinyon and juniper trees provided 47% of the total browse cover in 2004. Canopy cover for pinyon and juniper has gone from 4% in 1999 up to 11% by 2004. It would be a good idea to do some kind of thinning of the trees because when canopy cover of 15% is attained, the trees begin to have a pronounced negative effect on the understory species, especially the herbaceous species.

Green ephedra, slenderbush eriogonum, true mountain mahogany, and antelope bitterbrush provide the bulk of the winter forage on this site, although none of these species are very abundant. Green ephedra had a density of 660 plants/acre in 2004. Mature plants are large with average heights of more than 3 feet with a crown diameter of 5 feet. Slenderbush eriogonum plants are small averaging only 3 inches in height. Both green ephedra and slenderbush eriogonum showed very light hedging in 1994, and moderate to heavy use in 1999. All slenderbush eriogonum encountered in 2004 were heavily browsed. True mountain mahogany provides about 6 to 7% of the total browse cover with a density of about 130 plants/acre. Mature plants are large, averaging 5 feet in height. They have received consistent moderate to heavy browsing since 1988, but vigor has remained normal. Yucca is the most abundant shrub with a density of 2,320 plants/acre in 2004. The yuccas stiff, sharp leaves also protect the closely associated grasses from use.

The herbaceous understory is poor. The predominant grass is crested wheatgrass which provided 95% of the grass cover in 1999 and 82% in 2004. A few other species are present but occur rarely. Grasses produced only 10% cover in 1994 and 12% in 1999. Drought conditions prior to the 2004 reading caused average cover to decline to only a little over 2%. Forbs are uncommon and provide very little cover or forage.

## 1994 TREND ASSESSMENT

Ground cover characteristics have improved on the site since 1988. Percent bare ground has declined considerably while litter cover has increased. The only negative aspect of the soil trend is the decline in nested frequency of the herbaceous understory. Trend for soil is considered slightly up. Browse are not very abundant on the site but the trend is stable. Changes in density of true mountain mahogany and slenderbush eriogonum are mostly due to the greatly increased sample size used in 1994. Trend for the herbaceous understory is slightly down due to a decline in sum nested frequency of grasses and forbs. However, the dominant grass, crested wheatgrass, did not decline significantly. The Desirable Components Index (see methods) rated this site as poor with a score of 38 due to moderate decadence, low shrub cover, and low perennial forb cover.

### TREND ASSESSMENT

soil - up slightly (4)

browse - stable (3)

herbaceous understory - down slightly (2)

winter range condition (DC Index) - 38 (poor) Mountain big sagebrush type-chaining

## 1999 TREND ASSESSMENT

Trend for soil is stable. Percent bare ground has remained similar to 1994 estimates, but litter cover declined and percent cover of rock and pavement increased. Some localized erosion is occurring, however it is not a serious problem due to the gentle terrain. Trend for browse is stable. Densities for the key species, true mountain mahogany and green ephedra, are stable and vigor is normal. Utilization of mahogany has remained moderate to heavy, while ephedra, dwarf rabbitbrush, and bitterbrush display heavier use compared to 1994. Trend for the herbaceous understory is stable yet poor. Sum of nested frequency for grasses has increased slightly, but nested frequency of forbs has declined slightly. Crested wheatgrass dominates the herbaceous understory by providing 91% of the herbaceous cover. Forbs are rare and have steadily declined in frequency since 1988. Overall, grasses and forbs provide only about 12% cover. The Desirable Components Index rated this site as poor to fair with a score of 50 due to decrease in decadence, increase in shrub cover since 1994, but still has low perennial forb cover.

### TREND ASSESSMENT

soil - stable (3)

browse - stable (3)

herbaceous understory - stable (3)

winter range condition (DC Index) - 50 (poor to fair) Mountain big sagebrush type-chaining

## 2004 TREND ASSESSMENT

Trend for soil is slightly down. Relative cover for bare ground has increased from 16% to 24%, while relative vegetation cover dropped from 26% down to 22%. In addition, herbaceous vegetation cover declined four-fold from 12.4% to only 3.5%. There is some localized soil movement occurring and the erosion condition class determined erosion as slight. There are several preferred browse species present on the site but none are abundant. Trend for browse is stable but poor. Key species include true mountain mahogany and green ephedra. Mahogany numbers only 120 plants/acre. Mature plants are tall averaging 5 feet in height and utilization was very heavy on available portions. Vigor is good and annual leader growth averaged nearly 4 inches. Seed production appeared good this year as well. Green ephedra is more abundant with an estimated density of 660 plants/acre. Mature plants average just over 3 feet in height with a crown diameter of more than 5 foot. Ephedra provides 29% of the total browse cover with a canopy cover value of 7%. Utilization is mostly light but a few plants displayed moderate and heavy use. Slenderbush eriogonum is also abundant but

these plants are small, averaging only 3 inches in height and produced less than 1% cover. All plants sampled were heavily utilized. Pinyon and juniper dominate the browse component by providing nearly half of the total browse cover. Average tree cover has steadily increased and now averages 11%. This site needs to be retreated to reduce tree cover which is at a level that is beginning to suppress understory plants. Trend for the herbaceous understory is down. Sum of nested frequency of perennial grasses declined. Crested wheatgrass provides nearly all of the grass cover. It declined significantly in nested frequency and average cover dropped nearly six-fold from 11% to 2%. The forb component is diverse but all forbs combined produce only 1% cover. The Desirable Components Index rated this site as poor with a score of 40 due to a major decline in perennial grasses cover since the last two readings, shrub cover continues to increase, and still low perennial forb cover.

**TREND ASSESSMENT**

soil - slightly down (2)

browse - stable (3)

herbaceous understory - down (1)

winter range condition (DC Index) - 40 (poor) Mountain big sagebrush type-chaining

**HERBACEOUS TRENDS --**

Management unit 16C, Study no: 14

T y p e	Species	Nested Frequency				Average Cover %		
		'88	'94	'99	'04	'94	'99	'04
G	Agropyron cristatum	<sub>b</sub> 270	<sub>b</sub> 265	<sub>b</sub> 284	<sub>a</sub> 89	8.66	11.28	1.90
G	Agropyron intermedium	<sub>b</sub> 50	<sub>a</sub> 1	<sub>a</sub> -	<sub>a</sub> -	.00	-	-
G	Elymus junceus	<sub>a</sub> 2	<sub>b</sub> 16	<sub>ab</sub> 9	<sub>ab</sub> 11	.35	.25	.15
G	Oryzopsis hymenoides	24	25	20	20	.52	.37	.25
G	Sitanion hystrix	<sub>b</sub> 45	<sub>a</sub> 1	<sub>a</sub> -	<sub>a</sub> -	.00	-	-
Total for Annual Grasses		0	0	0	0	0	0	0
Total for Perennial Grasses		391	308	313	120	9.54	11.91	2.31
Total for Grasses		391	308	313	120	9.54	11.91	2.31
F	Arabis perennans	-	2	5	-	.00	.01	-
F	Caulanthus crassicaulis	-	1	-	-	.00	-	-
F	Chenopodium album (a)	-	1	-	-	.01	-	-
F	Chenopodium fremontii (a)	-	-	-	7	-	-	.02
F	Chenopodium leptophyllum(a)	-	-	-	4	-	-	.00
F	Cryptantha spp.	<sub>c</sub> 74	<sub>b</sub> 45	<sub>a</sub> 17	<sub>a</sub> 3	.65	.35	.00
F	Descurainia pinnata (a)	-	<sub>a</sub> 10	<sub>a</sub> 3	<sub>b</sub> 21	.02	.00	.21
F	Eriogonum alatum	-	-	-	-	.00	-	-
F	Erigeron spp.	4	-	-	-	-	-	-
F	Eriogonum spp.	-	4	2	-	.03	.01	-
F	Euphorbia spp.	<sub>a</sub> 137	<sub>b</sub> 41	<sub>a</sub> 20	<sub>ab</sub> 28	.17	.04	.46
F	Gilia spp. (a)	<sub>a</sub> 4	<sub>a</sub> -	<sub>a</sub> -	<sub>b</sub> 17	-	-	.23
F	Lappula occidentalis (a)	-	-	3	3	-	.00	.01

Type	Species	Nested Frequency				Average Cover %		
		'88	'94	'99	'04	'94	'99	'04
F	<i>Leucelene ericoides</i>	-	3	3	-	.15	.03	-
F	<i>Lepidium montanum</i>	2	-	-	-	-	-	-
F	<i>Malcolmia africana</i>	-	-	-	1	-	-	.00
F	<i>Machaeranthera canescens</i>	-	-	-	3	-	-	.03
F	<i>Machaeranthera grindelioides</i>	-	1	-	-	.00	-	-
F	<i>Medicago sativa</i>	5	-	-	-	.00	-	-
F	<i>Penstemon cyananthus</i>	<sub>b</sub> 32	<sub>a</sub> 2	<sub>a</sub> 2	<sub>a</sub> 15	.03	.00	.03
F	<i>Salsola iberica</i> (a)	-	5	-	-	.01	-	-
F	<i>Schoenocrambe linifolia</i>	10	4	4	8	.02	.04	.04
F	<i>Taraxacum officinale</i>	-	-	-	3	-	-	.00
F	<i>Thelesperma subnudum</i>	15	16	5	6	.08	.01	.04
F	<i>Townsendia incana</i>	6	6	5	16	.01	.01	.08
F	Unknown forb-perennial	3	-	-	-	-	-	-
Total for Annual Forbs		4	16	6	52	0.03	0.00	0.48
Total for Perennial Forbs		288	125	63	83	1.17	0.51	0.71
Total for Forbs		292	141	69	135	1.21	0.52	1.19

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

#### BROWSE TRENDS --

Management unit 16C, Study no: 14

Type	Species	Strip Frequency			Average Cover %		
		'94	'99	'04	'94	'99	'04
B	<i>Cercocarpus montanus</i>	6	6	6	.63	1.28	1.29
B	<i>Chrysothamnus nauseosus hololeucus</i>	0	1	0	-	-	-
B	<i>Cowania mexicana stansburiana</i>	0	0	2	-	-	-
B	<i>Ephedra viridis</i>	15	15	20	1.08	4.49	6.15
B	<i>Eriogonum microthecum</i>	11	4	8	.00	.03	.03
B	<i>Juniperus osteosperma</i>	0	6	7	.93	3.20	3.41
B	<i>Opuntia</i> spp.	1	0	0	-	-	-
B	<i>Pinus edulis</i>	0	13	10	3.31	4.06	6.72
B	<i>Purshia tridentata</i>	1	3	0	.03	-	-
B	<i>Yucca harrimaniae</i>	28	33	31	2.65	4.41	3.81
Total for Browse		62	81	84	8.65	17.49	21.44

CANOPY COVER, LINE INTERCEPT --  
Management unit 16C, Study no: 14

Species	Percent Cover	
	'99	'04
Cercocarpus montanus	-	3.00
Cowania mexicana stansburiana	-	.11
Ephedra viridis	-	7.11
Juniperus osteosperma	2.00	3.25
Pinus edulis	2.20	7.71
Yucca harrimaniae	-	3.70

KEY BROWSE ANNUAL LEADER GROWTH --  
Management unit 16C, Study no: 14

Species	Average leader growth (in)
	'04
Cercocarpus montanus	3.87
Cowania mexicana stansburiana	2.08

POINT-QUARTER TREE DATA --  
Management unit 16C, Study no: 14

Species	Trees per Acre		
	'94	'99	'04
Pinus edulis	109	141	149
Juniperus osteosperma	89	99	90

Average diameter (in)	
'99	'04
2.5	3.3
2.6	1.8

BASIC COVER --  
Management unit 16C, Study no: 14

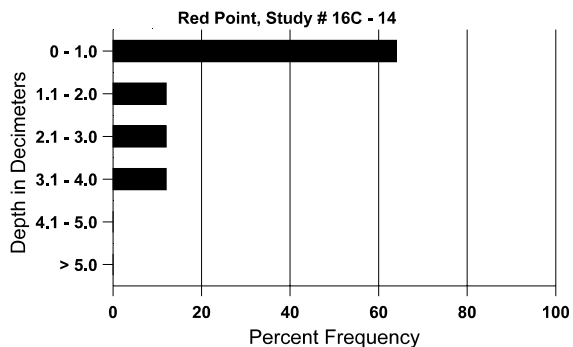
Cover Type	Average Cover %			
	'88	'94	'99	'04
Vegetation	3.50	19.52	27.82	25.25
Rock	14.25	13.35	18.65	15.71
Pavement	7.00	4.23	8.49	9.98
Litter	37.25	41.90	34.64	38.46
Cryptogams	0	.02	1.52	0
Bare Ground	38.00	17.68	17.72	27.79

SOIL ANALYSIS DATA --

Management unit 16C, Study no: 14, Study Name: Red Point

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%OM	PPM P	PPM K	ds/m
16.1	59.7 (14.4)	7.6	46.7	29.4	23.8	3.4	4.1	102.4	0.9

Stoniness Index



PELLET GROUP DATA --

Management unit 16C, Study no: 14

Type	Quadrat Frequency			Days use per acre (ha)	
	'94	'99	'04	'99	'04
Rabbit	30	56	38	-	-
Elk	35	40	25	55 (136)	38 (94)
Deer	19	33	16	25 (62)	31 (76)
Cattle	-	4	-	4 (11)	4 (11)

BROWSE CHARACTERISTICS --

Management unit 16C, Study no: 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)
<b>Ceratoides lanata</b>												
88	0	-	-	-	-	-	0	0	-	-	0	-/-
94	0	-	-	-	-	-	0	0	-	-	0	13/11
99	0	-	-	-	-	-	0	0	-	-	0	-/-
04	0	-	-	-	-	-	0	0	-	-	0	-/-
<b>Cercocarpus montanus</b>												
88	400	-	-	400	-	-	33	50	-	-	0	50/41
94	120	-	40	80	-	-	50	33	-	-	0	46/69
99	140	20	40	100	-	-	29	29	-	-	0	54/58
04	120	-	60	60	-	-	17	83	-	-	0	60/58

		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>Chrysothamnus nauseosus hololeucus</i>												
88	0	-	-	-	-	-	0	0	-	-	0	-/-
94	0	-	-	-	-	-	0	0	-	-	0	9/10
99	20	-	-	20	-	-	0	100	-	-	0	-/-
04	0	-	-	-	-	-	0	0	-	-	0	13/8
<i>Cowania mexicana stansburiana</i>												
88	0	-	-	-	-	-	0	0	0	-	0	-/-
94	0	-	-	-	-	-	0	0	0	-	0	-/-
99	0	-	-	-	-	-	0	0	0	-	0	-/-
04	40	-	-	20	20	-	0	100	50	-	50	28/34
<i>Ephedra viridis</i>												
88	866	-	466	400	-	-	85	8	0	-	0	24/30
94	520	-	80	440	-	60	0	0	0	-	0	38/56
99	500	-	60	440	-	60	52	4	0	-	0	37/54
04	660	-	80	540	40	20	6	3	6	3	3	37/62
<i>Eriogonum microthecum</i>												
88	533	-	200	333	-	-	0	0	0	-	0	2/2
94	1280	-	580	700	-	-	0	0	0	-	0	3/4
99	320	20	140	40	140	60	0	38	44	44	44	2/3
04	800	-	-	660	140	40	0	100	18	15	15	3/5
<i>Juniperus osteosperma</i>												
88	200	-	200	-	-	-	0	0	-	-	0	-/-
94	0	-	-	-	-	-	0	0	-	-	0	-/-
99	120	-	100	20	-	40	0	0	-	-	0	-/-
04	140	-	100	40	-	-	14	0	-	-	0	-/-
<i>Opuntia spp.</i>												
88	0	-	-	-	-	-	0	0	0	-	0	-/-
94	40	-	-	20	20	-	0	0	50	50	50	8/11
99	0	-	-	-	-	-	0	0	0	-	0	-/-
04	0	-	-	-	-	-	0	0	0	-	0	-/-
<i>Pinus edulis</i>												
88	400	-	400	-	-	-	0	0	0	-	0	-/-
94	0	-	-	-	-	-	0	0	0	-	0	-/-
99	260	-	100	160	-	-	0	0	0	-	8	23/26
04	260	-	40	180	40	-	0	0	15	-	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)
<b>Purshia tridentata</b>												
88	<b>66</b>	-	66	-	-	-	0	0	0	-	0	-/-
94	<b>20</b>	-	-	20	-	-	0	0	0	-	0	19/20
99	<b>160</b>	-	20	120	20	-	0	25	13	-	0	22/29
04	<b>0</b>	-	-	-	-	-	0	0	0	-	0	14/28
<b>Yucca harrimaniae</b>												
88	<b>2133</b>	-	533	1600	-	-	0	0	0	-	0	17/15
94	<b>1680</b>	-	-	1680	-	20	0	0	0	-	2	14/21
99	<b>2100</b>	-	120	1940	40	100	0	0	2	.95	.95	14/18
04	<b>2320</b>	-	300	2020	-	220	0	0	0	-	0	13/17