

LOWER TOM PATTERSON POINT - TREND STUDY NO. 10R-5-10

Vegetation Type: Chaining, Burn

Range Type: Substantial Deer Summer, Crucial Elk Summer (Calving habitat)

NRCS Ecological Site Description: Upland Shallow Loam (Pinyon-Utah Juniper), R034XY322UT

Land Ownership: BLM

Elevation: 7281 ft. (2220 m)

Aspect: North

Slope: 5-7%

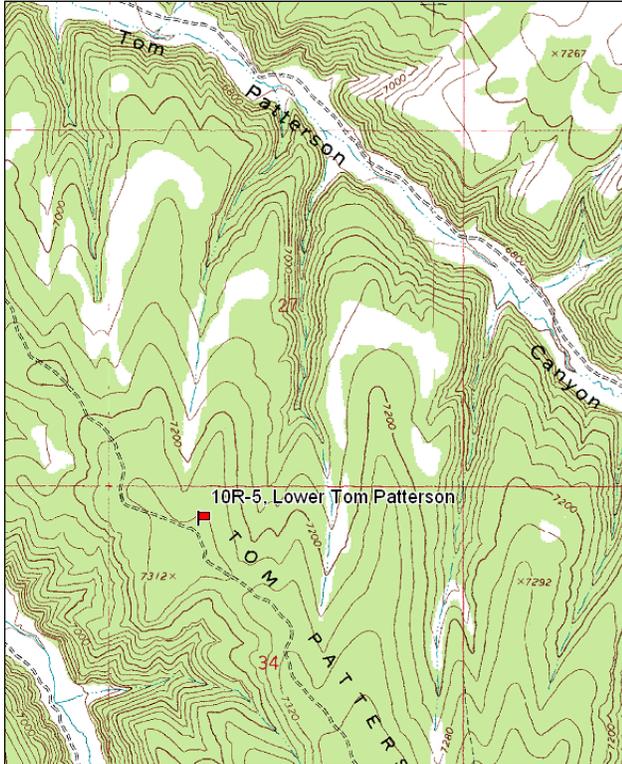
Transect bearing: 0° magnetic

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

Directions:

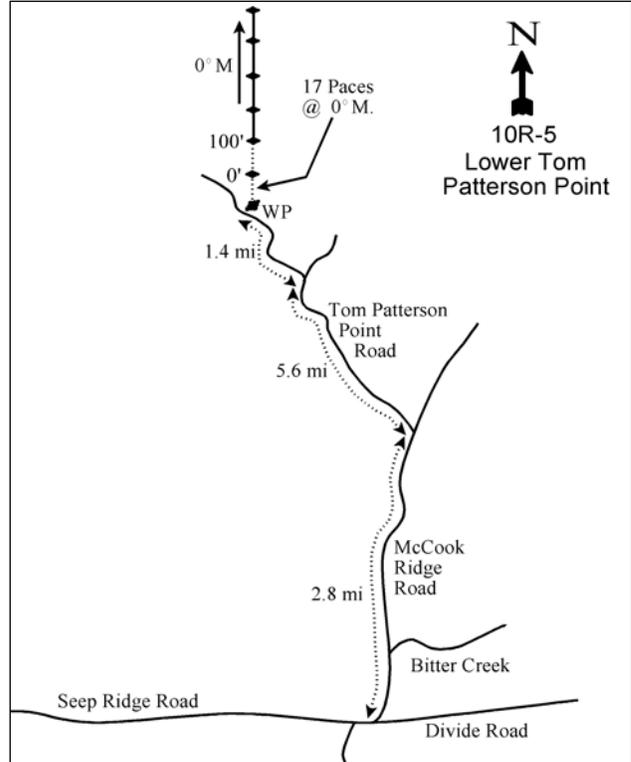
From the intersection of McCook Ridge Road and Seep Ridge Road travel north on McCook Ridge Road for 2.8 miles. Turn left onto Tom Patterson Point Road and go 5.6 miles to a fork. Take the left fork and travel 1.4 miles to a witness post on the right (east) side of the road. From the witness post walk 17 paces due north to the 0-foot stake.

Map Name: Tom Patterson Canyon



Township: 14S Range: 24E Section: 28

Diagrammatic Sketch:



GPS: NAD 83, UTM 12S 652792 E 4380665 N

LOWER TOM PATTERSON POINT - TREND STUDY NO. 10R-5

Site Information

Site Description: The study is located in an area that was chained in the late 1960's and was burned by a wildfire in the mid-1980's. A water tank is located about a half mile south of the site, with water tanks scattered along this entire point in an attempt to better distribute livestock use. Grazing in the area is managed by the Bureau of Land Management (BLM) as part of the Sweetwater allotment. Pellet transect data estimated very heavy elk use from 1997 to 2005, but was moderate in 2010. Estimated deer use was light from 1997 to 2005, but was moderate in 2010. Estimated cattle use has been light since 1997 (Table - Pellet Group Data).

Browse: Shrubs are scarce on this site following the fire. Species encountered on the site include small numbers of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), true mountain mahogany (*Cercocarpus montanus*), snowberry (*Symphoricarpos oreophilus*), broom snakeweed (*Gutierrezia sarothrae*), dwarf rabbitbrush (*Chrysothamnus depressus*) and rubber rabbitbrush (*C. nauseosus*). Mahogany plants have shown heavy use and have decreased in density on the site. Mountain big sagebrush had a large increase in density in 2010 due to a large increase in the recruitment of young plants (Table - Browse Characteristics).

Herbaceous Understory: Crested wheatgrass (*Agropyron cristatum*) dominates the site and was sampled in every quadrat since 2005. Other grasses occur only rarely and include: intermediate wheatgrass (*A. intermedium*), sedge (*Carex* sp.), Russian wildrye (*Elymus junceus*), Sandberg bluegrass (*Poa secunda*), needle-and-thread (*Stipa comata*) and smooth brome (*Bromus inermis*). A variety of forbs found on the site offer additional preferred spring and early summer forage. Common species include: thistleleaf penstemon (*Penstemon pachyphyllus*), lobeleaf groundsel (*Senecio multilobatus*) and scarlet globe mallow (*Sphaeralcea coccinea*) (Table - Herbaceous Trends).

Soil: Soil on the site is a sandy clay loam with a neutral soil reaction (pH 6.8). Potassium may have limited availability for plant growth and development at just 38 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). Bare ground cover is moderate with good vegetation and litter cover (Table - Basic Cover). Some slight pedestaling has occurred in the past although there was no sign of recent erosion and protective ground cover is adequate to protect the soil. The soil erosion condition was classified as stable in 2005 and 2010.

Trend Assessments

Browse:

- **1997 to 2000 - slightly down (-1):** Shrubs were already rare, but the density of mountain big sagebrush and true mountain mahogany decreased. There was no notable cover of true mountain mahogany sampled in 2000.
- **2000 to 2005 - stable (0):** There was a slight increase in the density of mountain big sagebrush, but no true mountain mahogany plants were sampled in the shrub density strip.
- **2005 to 2010 - up (+2):** The density of mountain big sagebrush increased from 160 plants/acre to 1,020 plants/acre due to a large increase in the recruitment of young sagebrush plants. Cover of big sagebrush increased to over 1% for the first time since the study began.

Grass:

- **1997 to 2000 - stable (0):** There was little change in the sum of nested frequency of perennial grasses, though cover increased from 14% to 18%. There was a significant decrease in crested wheatgrass nested frequency, but crested wheatgrass also provided the increase in cover.
- **2000 to 2005 - slightly up (+1):** The sum of nested frequency of perennial grasses changed little, but cover increased to 36% with a large increase in crested wheatgrass cover.
- **2005 to 2010 - stable (0):** There was little change in perennial grass sum of nested frequency or cover.

Forb:

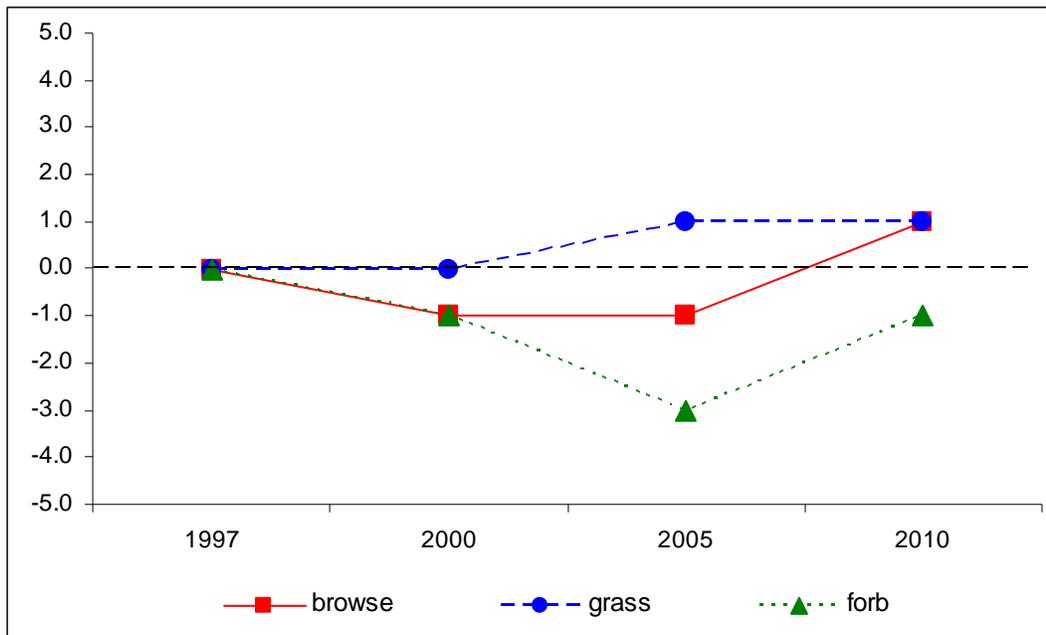
- **1997 to 2000 - slightly down (-1):** The sum of nested frequency of perennial forbs decreased by 10% and cover decreased from 4% to 3%.
- **2000 to 2005 - down (-2):** There was a 48% decrease in the sum of nested frequency of perennial forbs, though cover remained similar.
- **2005 to 2010 - up (+2):** The perennial forb sum of nested frequency increased by 56% and cover increased to 5%.

DEER DESIRABLE COMPONENTS INDEX - MID-LEVEL POTENTIAL SCALE --
Management unit 10R, study no: 5

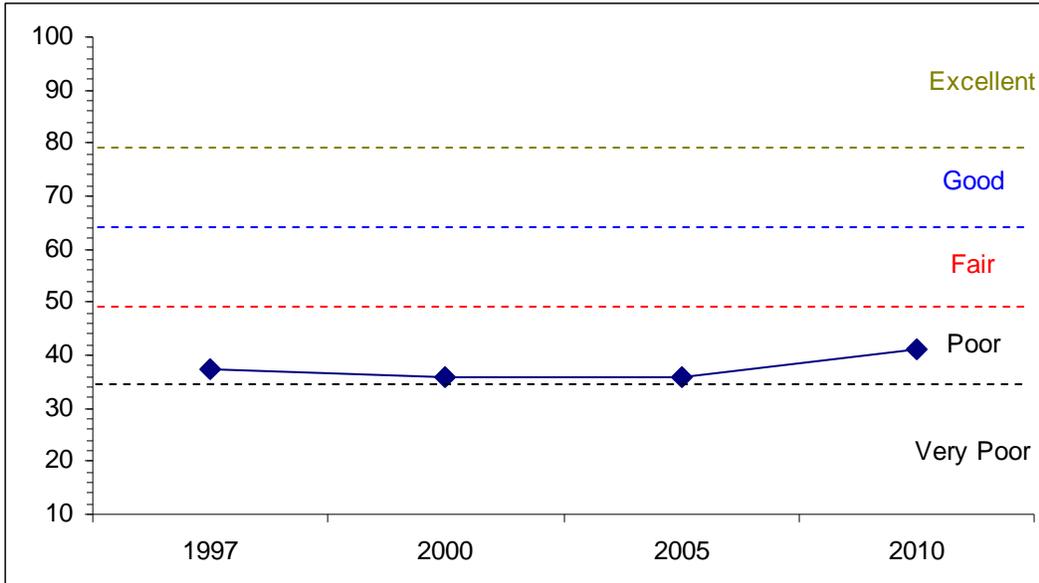
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
97	0.7	0.0	0.0	28.7	0.0	8.0	0.0	37.4	Poor
00	0.5	0.0	0.0	30.0	0.0	5.5	0.0	35.9	Very Poor-Poor
05	0.7	0.0	0.0	30.0	0.0	5.2	0.0	35.9	Very Poor-Poor
10	1.3	0.0	0.0	30.0	0.0	10.0	0.0	41.3	Poor

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
Management unit 10R, Study no: 5



DEER DESIRABLE COMPONENTS INDEX TREND, MID-LEVEL POTENTIAL--
 Management unit 10R, Study no: 5



HERBACEOUS TRENDS--
 Management unit 10R, Study no: 5

Type	Species	Nested Frequency				Average Cover %			
		'97	'00	'05	'10	'97	'00	'05	'10
G	Agropyron cristatum	b434	a397	a400	ab419	13.75	17.73	34.31	32.32
G	Agropyron intermedium	-	5	3	8	-	.03	.03	.69
G	Bromus inermis	3	-	3	5	.03	-	.15	.15
G	Carex sp.	b25	b28	ab14	a7	.33	.49	.25	.02
G	Elymus junceus	2	-	2	3	.15	-	.15	.18
G	Poa secunda	ab8	a8	b28	a9	.09	.03	.37	.12
G	Stipa comata	a-	a3	b20	a3	-	.03	.99	.15
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		472	441	470	454	14.35	18.32	36.27	33.63
Total for Grasses		472	441	470	454	14.35	18.32	36.27	33.63
F	Agoseris glauca	-	-	3	4	-	-	.15	.06
F	Antennaria rosea	ab7	b14	a3	ab5	.33	.38	.15	.15
F	Arabis sp.	b10	ab3	ab5	a-	.02	.03	.04	-
F	Astragalus convallarius	ab4	a-	b8	b11	.06	-	.24	.28
F	Astragalus sp.	ab4	b13	a-	b16	.04	.40	-	1.01
F	Astragalus spatulatus	-	-	-	1	-	-	-	.03
F	Astragalus utahensis	-	3	1	8	-	.01	.00	.04
F	Chaenactis douglasii	1	-	-	-	.00	-	-	-
F	Chenopodium fremontii (a)	-	-	4	-	-	-	.01	-
F	Descurainia pinnata (a)	-	-	8	-	-	-	.05	-
F	Erigeron pumilus	-	-	-	3	-	-	-	.03
F	Erigeron sp.	8	7	2	10	.07	.04	.02	.22
F	Eriogonum sp.	-	1	-	-	-	.00	-	-
F	Hedysarum boreale	c33	a-	b13	a-	.82	-	.39	-

Type	Species	Nested Frequency				Average Cover %			
		'97	'00	'05	'10	'97	'00	'05	'10
F	Lappula occidentalis (a)	a-	a-	ab ⁴	b ⁹	-	-	.01	.07
F	Lesquerella sp.	-	-	-	3	-	-	-	.01
F	Lygodesmia sp.	4	-	10	-	.03	-	.07	-
F	Machaeranthera grindelioides	c ²⁵	a-	ab ²	bc ¹³	.17	-	.01	.05
F	Penstemon pachyphyllus	c ⁸¹	b ⁵²	a ¹	a ¹⁴	1.23	.74	.01	.34
F	Penstemon sp.	6	-	5	3	.07	-	.03	.18
F	Phlox austromontana	8	12	11	12	.21	.06	.33	1.13
F	Phlox longifolia	-	3	4	-	-	.00	.00	-
F	Salsola iberica (a)	-	-	2	-	-	-	.01	-
F	Senecio multilobatus	b ⁴⁶	c ⁷⁰	a ¹⁰	a ¹⁶	.24	.48	.21	.22
F	Sphaeralcea coccinea	a ⁴⁹	ab ⁶⁰	ab ⁷¹	b ⁸⁷	.38	.36	.90	1.02
F	Taraxacum officinale	c ²⁴	b ⁹	a-	ab ¹	.23	.05	-	.00
F	Townsendia sp.	a-	a-	ab ⁴	b ¹³	-	-	.01	.06
F	Tragopogon dubius	b ¹⁵	c ⁴⁶	a-	18	.03	.15	.00	.18
Total for Annual Forbs		0	0	18	9	0	0	0.07	0.07
Total for Perennial Forbs		325	293	153	238	3.98	2.73	2.60	5.06
Total for Forbs		325	293	171	247	3.98	2.73	2.68	5.13

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

BROWSE TRENDS--

Management unit 10R, Study no: 5

Type	Species	Strip Frequency				Average Cover %			
		'97	'00	'05	'10	'97	'00	'05	'10
B	Artemisia tridentata vaseyana	6	2	5	8	.38	.38	.53	1.04
B	Cercocarpus montanus	2	1	0	0	.15	-	-	-
B	Chrysothamnus depressus	1	0	1	1	-	-	-	-
B	Chrysothamnus nauseosus	0	0	2	3	-	-	.01	.15
B	Chrysothamnus viscidiflorus	1	1	2	1	-	-	-	.00
B	Gutierrezia sarothrae	2	10	12	30	.01	.45	.27	.72
B	Symphoricarpos oreophilus	2	2	0	0	.00	.00	-	-
Total for Browse		14	16	22	43	0.55	0.84	0.81	1.93

CANOPY COVER, LINE INTERCEPT--

Management unit 10R, Study no: 5

Species	Percent Cover	
	'05	'10
Artemisia tridentata vaseyana	.38	1.00
Chrysothamnus nauseosus	-	.11
Chrysothamnus viscidiflorus	.10	-
Gutierrezia sarothrae	.55	.15

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 10R, Study no: 5

Species	Average leader growth (in)	
	'05	'10
Artemisia tridentata vaseyana	1.9	2.1
Cercocarpus montanus	1.5	1.6

BASIC COVER--

Management unit 10R, Study no: 5

Cover Type	Average Cover %			
	'97	'00	'05	'10
Vegetation	20.14	28.12	40.93	41.33
Rock	1.58	.43	1.96	.48
Pavement	7.10	2.22	3.55	4.92
Litter	24.71	33.69	18.95	43.23
Cryptogams	1.08	2.92	.58	.37
Bare Ground	27.13	35.46	46.19	26.10

SOIL ANALYSIS DATA --

Management unit 10R, Study no: 5, Study Name: Lower Tom Patterson Point

Effective rooting depth (in)	pH	loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
16.9	6.8	48.0	28.8	23.2	3.1	7.4	38.4	2.0

PELLET GROUP DATA--

Management unit 10R, Study no: 5

Type	Quadrat Frequency				Days use per acre (ha)			
	'97	'00	'05	'10	'97	'00	'05	'10
Rabbit	3	5	17	5	-	-	-	-
Elk	70	58	80	40	143 (353)	101 (250)	106 (263)	54 (132)
Deer	2	5	19	19	1 (3)	1 (2)	5 (12)	70 (174)
Cattle	4	3	1	3	22 (54)	14 (35)	5 (13)	13 (32)

BROWSE CHARACTERISTICS--

Management unit 10R, Study no: 5

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization		% poor vigor	Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy		
Artemisia frigida									
97	0	0	0	-	-	0	0	0	-/-
00	0	0	0	-	-	0	0	0	-/-
05	0	0	0	-	-	0	0	0	9/13
10	0	0	0	-	-	0	0	0	6/12

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization			Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy	% poor vigor	
<i>Artemisia tridentata vaseyana</i>									
97	180	56	44	-	60	11	0	0	26/31
00	40	50	50	-	40	0	0	0	33/35
05	160	50	50	-	700	0	38	0	25/37
10	1020	88	12	-	180	4	2	0	24/36
<i>Cercocarpus montanus</i>									
97	40	0	100	-	-	100	0	0	38/35
00	20	0	100	-	-	0	100	0	37/35
05	0	0	0	-	-	0	0	0	33/30
10	0	0	0	-	-	0	0	0	29/29
<i>Chrysothamnus depressus</i>									
97	20	0	100	-	-	0	0	0	7/16
00	0	0	0	-	-	0	0	0	-/-
05	20	0	100	-	-	100	0	0	5/9
10	20	0	100	-	-	0	0	0	5/13
<i>Chrysothamnus nauseosus</i>									
97	0	0	0	-	-	0	0	0	-/-
00	0	0	0	-	-	0	0	0	14/17
05	40	100	0	-	-	0	0	0	25/28
10	60	33	67	-	-	100	0	0	24/24
<i>Chrysothamnus viscidiflorus</i>									
97	20	0	100	-	-	0	0	0	8/14
00	20	0	100	-	-	0	0	0	-/-
05	40	0	100	-	-	50	50	0	13/15
10	20	100	0	-	-	0	0	0	12/15
<i>Gutierrezia sarothrae</i>									
97	40	0	100	0	-	0	0	0	7/6
00	260	15	85	0	20	0	0	0	7/9
05	1220	2	98	0	-	26	3	0	7/8
10	1460	14	82	4	-	0	0	3	5/8
<i>Opuntia sp.</i>									
97	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	1/3
<i>Symphoricarpos oreophilus</i>									
97	40	0	50	50	-	0	0	0	34/36
00	40	0	50	50	-	100	0	0	-/-
05	0	0	0	0	-	0	0	0	31/42
10	0	0	0	0	-	0	0	0	35/43