

PRAETOR SLOPE - TREND STUDY NO. 25A-5-09

Vegetation Type: Seeded Grasses

Range Type: Crucial Deer Winter, Substantial Elk Winter

NRCS Ecological Site Description: Not Available

Land Ownership: BLM

Elevation: 7,000 ft (2,133 m)

Aspect: West

Slope: 2%-5%

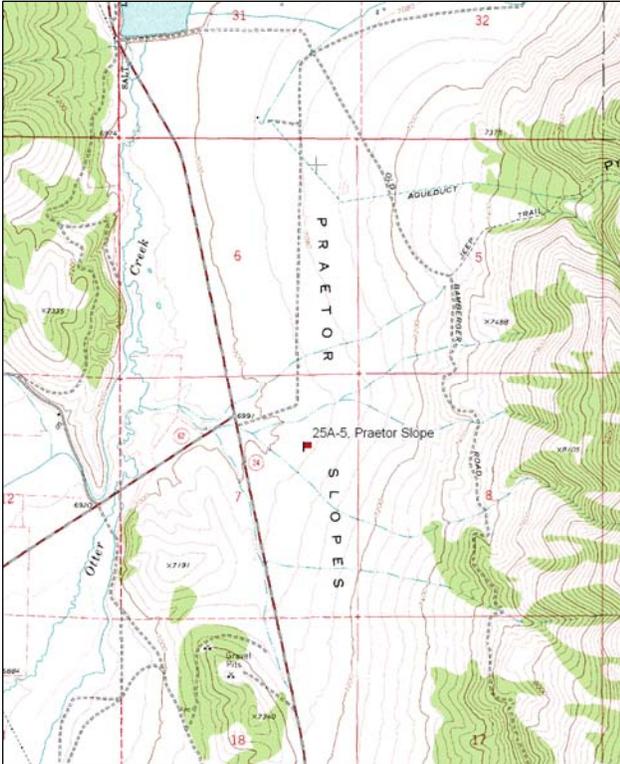
Transect bearing: 168 degrees magnetic

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

Directions:

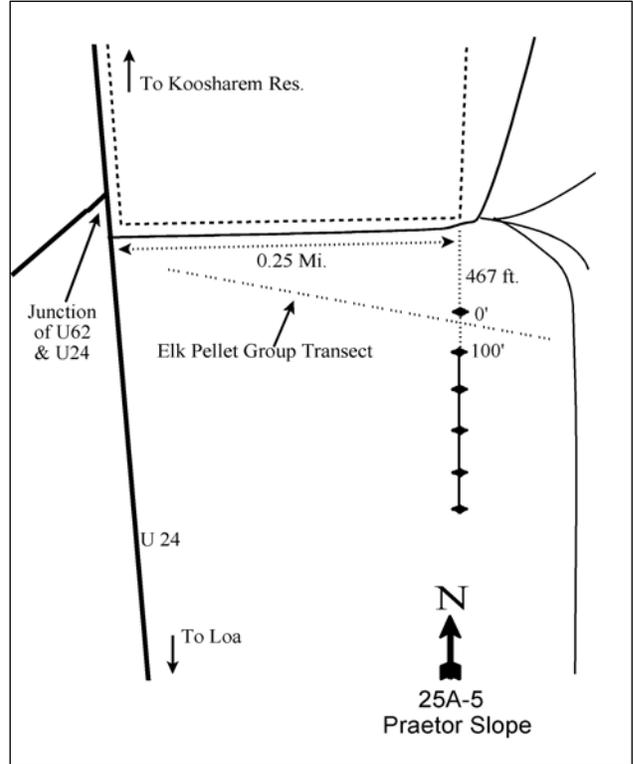
From the junction of U-62 and U-24 south of Koosharem Reservoir, proceed south for 25 yards and turn left onto a dirt road. Go through the gate and up the road 0.25 miles to where the road turns at the fence corner. Walk 467 feet due south from the fence corner to the top of a small rise. The baseline starts here, and is marked by a 5' steel fence post with a blue browse tag #55.

Map Name: Burrville, Utah



Township: 26S, Range: 1E, Section: 7

Diagrammatic Sketch:



GPS: NAD 83, UTM 12S 427194 E 4269175 N

PRAETOR SLOPE - TREND STUDY NO. 25A-5

Site Information

Site Description: This study is located south of Koosharem Reservoir and west of state highway U-24 on BLM administered land within the Fishlake grazing allotment. More than 1,400 acres of this area was chained and seeded in 1964, and then 3,000 acres were harrowed and seeded in the fall of 2002. Sheep use this area on a rest rotation grazing system. Deer use has been low in all sample years. Elk use was low until 2009 when it was very heavy. Cattle use was low in 2009 and there was no sign of sheep use (Table - Pellet Group Data).

Browse: Wyoming big sagebrush dominated the site until the harrow treatment in 2002 which removed 90% of sagebrush cover. The site now has little browse remaining. Prior to treatment the sagebrush stand had little recruitment and decadence was moderately high (Table - Browse Characteristics).

Herbaceous Understory: Crested wheatgrass (*Agropyron cristatum*) is the dominant grass species and has provided nearly all the grass cover since 1985. Perennial forbs are rare on the site and bur buttercup has increased steadily in frequency and cover (Table - Herbaceous Trends).

Soil: The soil was classified as loam and is slightly alkaline (pH 7.6) (Table - Soil Analysis Data). Bare ground has fluctuated between 11% and 27% since 1985 (Table - Basic Cover). The soil erosion condition was classified as stable in 2004 and 2009.

Trend Assessments

Browse:

- **1985 to 1991 – down (-2):** Wyoming big sagebrush density decreased 32% from 8,265 plants/acre to 5,598 plants/acre. Decadence increased from 3% to 52%, while recruitment fell from 43% to 4%.
- **1991 to 1999 - stable (0):** Differences in density may be related to the larger sample area used in 1999; therefore, trend was determined using other parameters. Wyoming big sagebrush recruitment is very low at 1% and decadence is still high at 30%.
- **1999 to 2004 - down (-2):** There was a harrow treatment applied in 2002, so the decreases in trend were anticipated. Sagebrush density decreased 91% from 4,420 plants/acre to 380 plants/acre and cover decreased from 12% to less than 1%. Decadence increased slightly to 37% and plants displaying poor vigor increased from 11% to 37%. However, recruitment of young plants increased to 11%.
- **2004 to 2009 - up (+2):** Wyoming big sagebrush density increased 31% to 500 plants/acre. Decadence decreased to only 4% and poor vigor decreased to 0%, but recruitment also decreased and is low at 4%. The sagebrush population seems to be recovering from the harrow treatment in 2002.

Grass:

- **1985 to 1991 - stable (0):** The sum of nested frequency for perennial grasses remains similar to the past reading. Crested wheatgrass is the dominant species accounting for nearly 100% of all quadrat frequency.
- **1991 to 1999 - stable (0):** The sum of nested frequency for perennial remains similar to past readings and provides 16% cover. Crested wheat grass still accounts for 100% of grass cover.
- **1999 to 2004 – slightly down (-1):** There was a harrow treatment applied in 2002 that was intended to increase the herbaceous understory. The sum of nested frequency for perennial grasses decreased 10%, but cover increased from 16% to 28%. Crested wheatgrass provided all of the grass cover.
- **2004 to 2009 - slightly up (+1):** The sum of nested frequency for perennial grasses increased 11% and cover remained similar at 29%. Crested wheatgrass accounts for 99% of grass cover.

Forb:

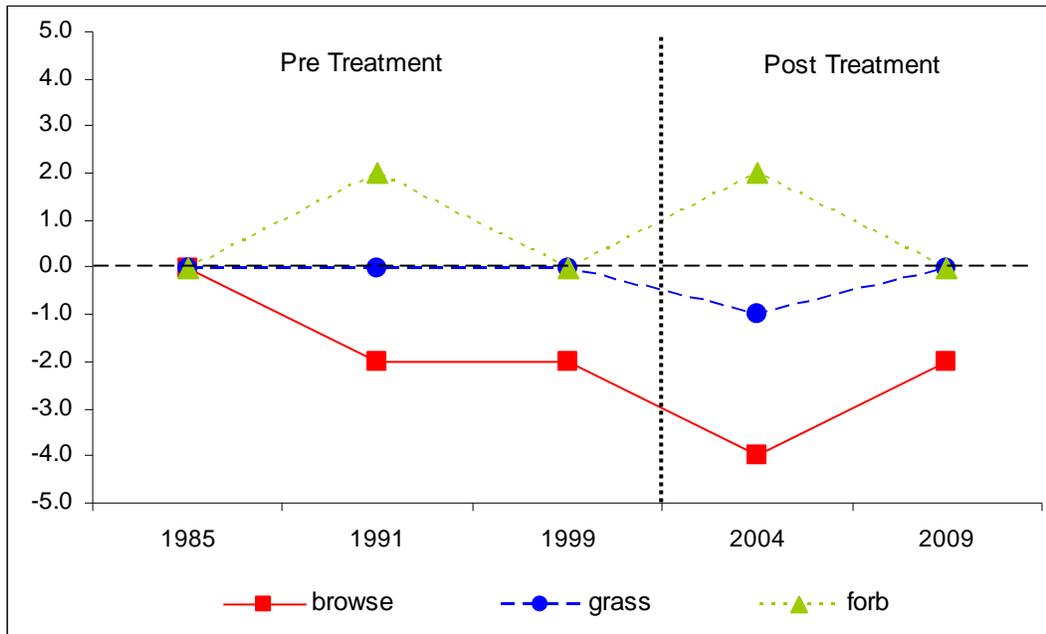
- **1985 to 1991 - up (+2):** The sum of nested frequency for perennial forbs increased three-fold. Forbs are rare on the site and this may be a short term fluctuation.
- **1991 to 1999 - down (-2):** No perennial forbs were sampled this year. Bur buttercup was the only species sampled. Total forb cover is below 1%.
- **1999 to 2004 – up (+2):** There was a harrow treatment applied in 2002 that was intended to increase the herbaceous understory. The sum of nested frequency for perennial forbs increased substantially, as did that of various annual species. Perennial forb cover increased from 0% to 2%, but annual forb cover also increased markedly. Blue flax (*Linum lewisii*) was the most common perennial species, but the annual species, burr buttercup, accounted for 51% of forb cover.
- **2004 to 2009 - down (-2):** The sum of nested frequency for perennial forbs decreased 73% and cover decreased to less than 1%. Bur buttercup provides 96% of forb cover (4% cover).

DEER DESIRABLE COMPONENTS INDEX - LOW POTENTIAL SCALE --
Management unit 25A, 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
99	15.1	6.0	0.5	30.0	0.0	0.0	0.0	51.6	Good
04	0.4	0.0	0.0	30.0	0.0	3.8	0.0	34.2	Fair
09	1.3	0.0	0.0	30.0	0.0	0.4	0.0	31.6	Fair

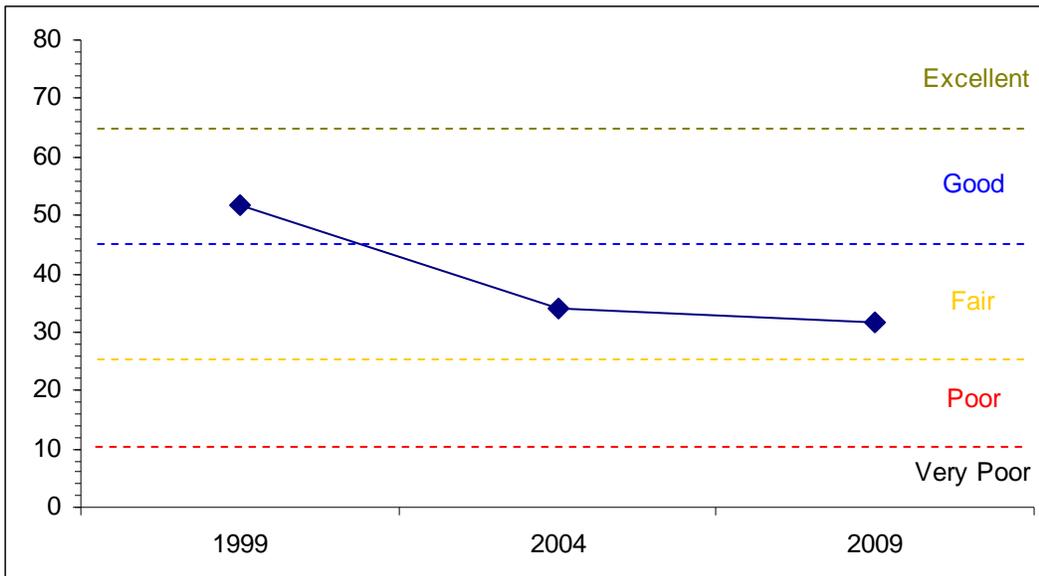
Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
Management unit 25A Study no: 5



DEER DESIRABLE COMPONENTS INDEX TREND, LOW POTENTIAL SCALE

Management unit 25A, Study no: 5



HERBACEOUS TRENDS--

Management unit 25A, Study no: 5

Type	Species	Nested Frequency					Average Cover %		
		'85	'91	'99	'04	'09	'99	'04	'09
G	Agropyron cristatum	c329	bc316	bc311	a269	ab298	16.31	27.72	28.59
G	Agropyron intermedium	-	-	-	8	3	-	.09	.03
G	Agropyron smithii	-	-	-	3	-	-	.00	-
G	Poa secunda	a-	a-	a-	a2	b12	-	.00	.33
G	Sitanion hystrix	1	2	-	-	-	-	-	-
G	Stipa lettermani	-	3	1	-	1	.00	-	.00
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		330	321	312	282	314	16.31	27.82	28.95
Total for Grasses		330	321	312	282	314	16.31	27.82	28.95
F	Antennaria rosea	5	-	-	-	3	-	-	.00
F	Arabis sp.	-	1	-	-	-	-	-	-
F	Astragalus beckwithii	-	4	-	-	-	-	-	-
F	Astragalus miser	6	10	-	7	-	-	.09	-
F	Chenopodium fremontii (a)	-	-	-	3	-	-	.00	-
F	Erigeron sp.	6	3	-	-	1	-	-	.03
F	Eriogonum sp.	-	1	-	-	-	-	-	-
F	Gayophytum ramosissimum(a)	-	-	a-	b11	a-	-	.07	-
F	Linum lewisii	a-	a-	a-	b70	a-	-	1.44	-
F	Microsteris gracilis (a)	-	-	-	7	-	-	.01	-
F	Penstemon sp.	-	-	-	1	-	-	.03	-
F	Phlox hoodii	-	-	-	-	2	-	-	.00
F	Phlox longifolia	a-	b57	a-	ab15	a1	-	.06	.03
F	Ranunculus testiculatus (a)	-	-	a29	b185	c266	.15	2.07	3.87
F	Sanguisorba minor	-	-	-	2	-	-	.00	-

Type	Species	Nested Frequency					Average Cover %		
		'85	'91	'99	'04	'09	'99	'04	'09
F	<i>Sphaeralcea grossulariifolia</i>	a ⁻	a ⁻	a ⁻	b ¹⁶	b ¹²	-	.27	.11
F	<i>Trifolium</i> sp.	b ¹⁸	b ³³	a ⁻	a ⁻	a ⁻	-	-	-
Total for Annual Forbs		0	0	29	206	266	0.15	2.17	3.87
Total for Perennial Forbs		35	109	0	111	19	0	1.90	0.18
Total for Forbs		35	109	29	317	285	0.15	4.08	4.05

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

BROWSE TRENDS--

Management unit 25A, Study no: 5

Type	Species	Strip Frequency			Average Cover %		
		'99	'04	'09	'99	'04	'09
B	<i>Artemisia tridentata wyomingensis</i>	90	16	21	12.08	.31	1.00
B	<i>Leptodactylon pungens</i>	0	1	2	-	.00	.00
Total for Browse		90	17	23	12.08	0.31	1.00

CANOPY COVER, LINE INTERCEPT--

Management unit 25A, Study no: 5

Species	Percent Cover	
	'04	'09
<i>Artemisia tridentata wyomingensis</i>	.33	.63
<i>Leptodactylon pungens</i>	.13	-

BASIC COVER--

Management unit 25A, Study no: 5

Cover Type	Average Cover %				
	'85	'91	'99	'04	'09
Vegetation	4.75	4.75	25.31	31.67	32.40
Rock	5.00	13.25	12.26	19.76	10.42
Pavement	24.50	17.75	29.79	16.14	30.94
Litter	44.75	37.00	21.65	25.97	25.81
Cryptogams	0	0	1.10	0	0
Bare Ground	21.00	27.25	11.23	20.52	10.86

SOIL ANALYSIS DATA --

Management unit 25A, Study no: 5, Study Name: Praetor Slope

Effective rooting depth (in)	pH	loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
17.8	7.6	36	39.1	24.9	1.7	14.7	361.6	0.9

PELLET GROUP DATA--

Management unit 25A, Study no: 5

Type	Quadrat Frequency			Days use per acre (ha)		
	'99	'04	'09	'99	'04	'09
Sheep	8	-	-	22 (56)	-	-
Rabbit	66	45	34	-	-	-
Elk	1	2	24	1 (2)	4 (10)	73 (180)
Deer	12	1	15	12 (30)	-	2 (5)
Cattle	1	-	2	-	-	4 (9)

BROWSE CHARACTERISTICS--

Management unit 25A, Study no: 5

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 wyomingensis</i>									
85	8265	43	49	8	733	39	48	6	17/21
91	5598	5	43	52	-	65	8	24	16/18
99	4420	1	68	30	-	62	23	11	21/28
04	380	11	53	37	20	0	16	37	13/16
09	500	4	92	4	-	0	0	0	17/17
<i>Atriplex canescens</i>									
85	0	0	0	-	-	0	0	0	-/-
91	0	0	0	-	-	0	0	0	-/-
99	0	0	0	-	-	0	0	0	9/12
04	0	0	0	-	-	0	0	0	-/-
09	0	0	0	-	-	0	0	0	-/-
<i>Chrysothamnus nauseosus</i>									
85	0	0	0	-	-	0	0	0	-/-
91	0	0	0	-	-	0	0	0	-/-
99	0	0	0	-	-	0	0	0	-/-
04	0	0	0	-	-	0	0	0	-/-
09	0	0	0	-	-	0	0	0	28/31
<i>Chrysothamnus viscidiflorus viscidiflorus</i>									
85	0	0	0	-	-	0	0	0	-/-
91	0	0	0	-	-	0	0	0	-/-
99	0	0	0	-	-	0	0	0	-/-
04	0	0	0	-	-	0	0	0	-/-
09	0	0	0	-	-	0	0	0	11/8
<i>Leptodactylon pungens</i>									
85	0	0	0	-	-	0	0	0	-/-
91	0	0	0	-	-	0	0	0	-/-
99	0	0	0	-	-	0	0	0	-/-
04	20	0	100	-	-	0	0	0	5/7
09	60	0	100	-	-	0	0	0	6/9

		Age class distribution						Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)		
Opuntia sp.											
85	66	0	100	-	-	0	0	0	6/9		
91	66	0	100	-	-	0	0	0	2/2		
99	0	0	0	-	-	0	0	0	-/-		
04	0	0	0	-	-	0	0	0	-/-		
09	0	0	0	-	-	0	0	0	-/-		