

BIG MEADOW - TREND STUDY NO. 8B-12-10

Vegetation Type: Wet Meadow

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

NRCS Ecological Site Description: LOWLAND (10-14W), R034XY228WY

Land Ownership: UDWR

Elevation: 7450 ft. (2271 m)

Aspect: Southeast

Slope: 2%-3%

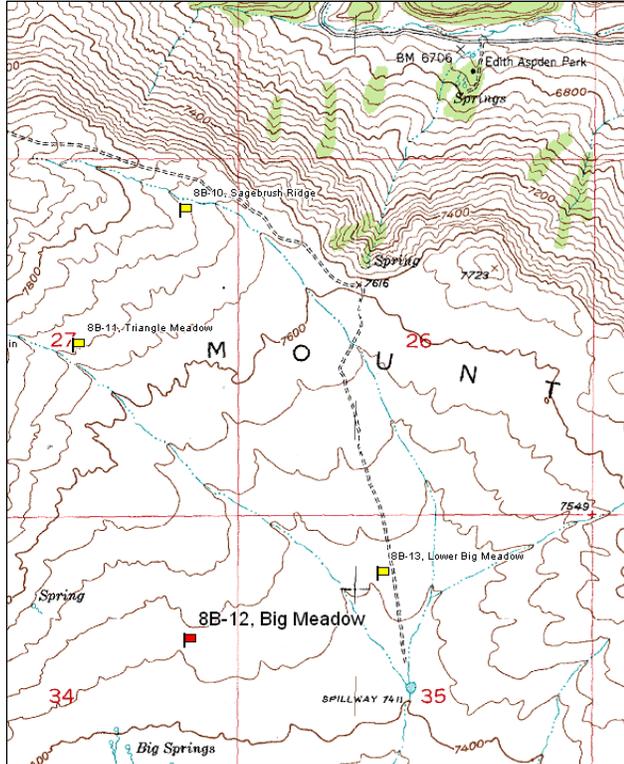
Transect bearing: 322° magnetic

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

Directions:

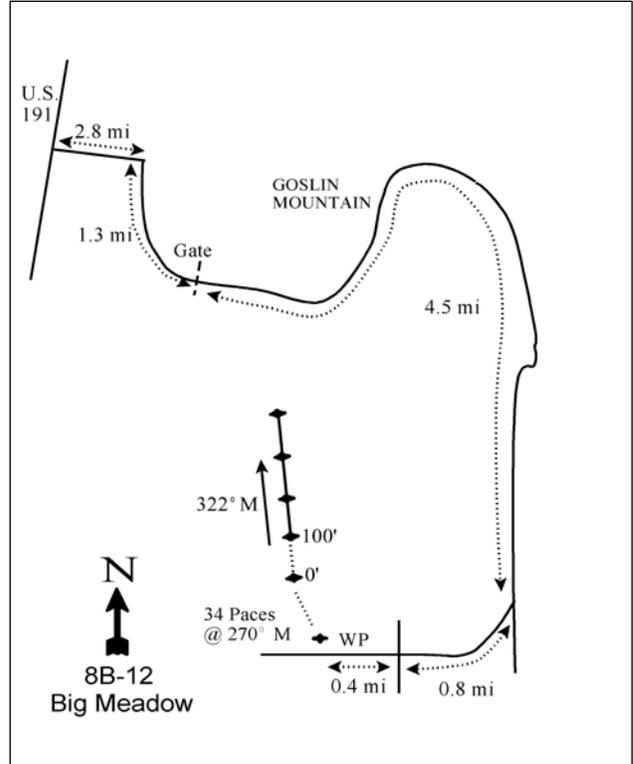
From Dutch John, proceed north towards Antelope Flat on Highway U.S. 191 for approximately 8 miles. Before reaching the Wyoming-Utah border, turn east on the Antelope Flat Road toward Goslin Mountain. Go 2.8 miles and turn right toward Goslin Mountain. Bear left and drive 1.3 miles to a gate. Continue 4.5 miles to a fork. Bear right and proceed 0.8 miles to a four-way intersection. Continue straight west and drive 0.4 miles to a witness post. The witness post is located 50 feet off the north side of the road. From the witness post walk 34 paces at 270°M. to the 0-foot baseline stake.

Map Name: Goslin Mountain



Township: 3N Range: 23E Section: 34

Diagrammatic Sketch:



GPS: NAD 83, UTM 12T 642944 E 4535095 N

BIG MEADOW - TREND STUDY NO. 8B-12

Site Information

Site Description: The study is located in a wet meadow in the Goslin Mountain area, just north of Big Springs. The study was established to monitor concentrated use by wildlife and livestock on the small meadows in the area. Water is found on the surface of the meadow until sometime in June or July depending on weather conditions. The surrounding area was treated by a lop and scatter to remove encroaching pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) in the fall of 2006 as part of the Goslin Mountain P/J encroachment Removal ([WRI Project #297](#)). The area is administered by the Utah Division of Wildlife Resources (UDWR), but grazing is managed by the Bureau of Land Management as part of the Goslin Mountain allotment. Pellet group transect data has indicated light use by deer since 2000. Estimated cattle use was light in 2000, but was very heavy in 2010 with cattle using the site at the time of the reading (Table - Pellet Group Data).

Browse: There is no browse on this site.

Herbaceous Understory: Grasses are diverse and abundant, providing most of the vegetation cover on the site. Baltic rush (*Juncus balticus*) and Kentucky bluegrass (*Poa pratensis*) dominate the grass component. Other common species include several sedges (*Carex spp.*) and tufted hair-grass (*Deschampsia caespitosa*). Forbs are also diverse and abundant, though not nearly as abundant as grasses. Common forbs include yarrow (*Achillea millefolium*), Pacific aster (*Aster chilensis*), thistle (*Cirsium sp.*), two species of cinquefoil (*Potentilla spp.*), balsam groundsel (*Senecio pauperculus*), dandelion (*Taraxacum officinale*) and hook violet (*Viola adunca*). Forbs have steadily decreased on the site since 1995 (Table - Herbaceous Trends).

Soil: The soil is a clay loam with a mildly alkaline soil reaction (pH 7.4). Phosphorous may have limited availability for plant growth and development at 5.5 ppm (Tiedemann and Lopez 2004) (Table - Soil Analysis Data). Bare ground cover is minimal with high amounts of vegetation and litter cover (Table - Basic Cover). Due to the wet nature of the meadow, deep hoof action by cattle has caused the surface to be uneven in places. The soil erosion condition was classified as stable in 2010.

Trend Assessments

Browse:

- There is no browse on the site.

Grass:

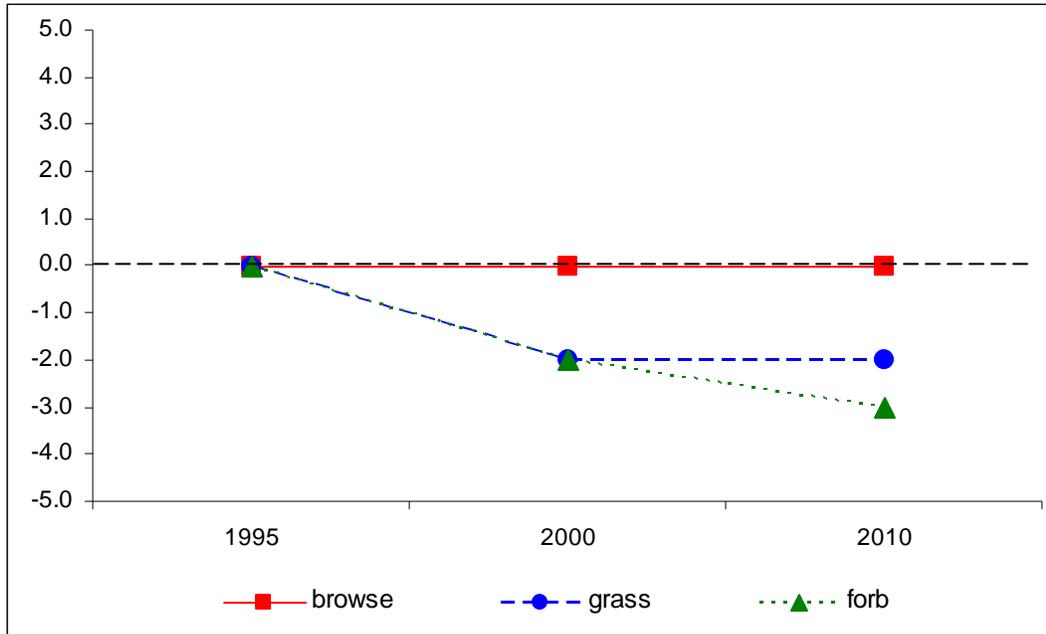
- **1995 to 2000 - down (-2):** The sum of nested frequency of perennial grasses decreased by 22%, though cover increased from 41% to 60%. There was a significant increase in the nested frequency of Baltic rush and Nebraska sedge (*Carex nebraskensis*) with subsequent increases in cover.
- **2000 to 2010 - stable (0):** There was a slight decrease in the sum of nested frequency of perennial grasses, but cover increased to 69%.

Forb:

- **1995 to 2000 - down (-2):** The sum of nested frequency of perennial forbs decreased by 56% and cover decreased from 28% to 14%.
- **2000 to 2010 - slightly down (-1):** The perennial forb sum of nested frequency decreased by 11% and cover decreased to 11%.

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
Management unit 8B, Study no: 12



HERBACEOUS TRENDS--

Management unit 08B, Study no: 12

Type	Species	Nested Frequency			Average Cover %		
		'95	'00	'10	'95	'00	'10
G	Agropyron trachycaulum	b89	a29	a7	.74	.15	.10
G	Carex nebraskensis	b233	c303	a135	2.76	14.13	8.42
G	Carex sp.	b146	a39	a59	2.86	1.39	1.22
G	Deschampsia caespitosa	88	47	63	1.85	.76	1.42
G	Elymus junceus	-	-	3	-	-	.15
G	Hordeum brachyantherum	a9	b31	a-	.01	.31	-
G	Juncus balticus	a410	b444	a403	16.51	34.60	34.15
G	Muhlenbergia richardsonis	b16	ab1	a-	.07	.00	-
G	Phleum pratense	-	2	-	-	.03	-
G	Poa pratensis	c440	a223	b354	16.20	8.55	23.11
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		1431	1119	1024	41.02	59.94	68.58
Total for Grasses		1431	1119	1024	41.02	59.94	68.58
F	Achillea millefolium	b48	a8	ab27	1.43	.10	1.42
F	Agoseris glauca	10	3	7	.05	.00	.10
F	Antennaria rosea	b26	a3	a15	.91	.03	1.06
F	Arabis sp.	3	-	-	.00	-	-
F	Aster chilensis	c146	a35	b81	3.13	.91	2.16
F	Aster sp.	b36	a-	b35	.59	-	.60
F	Astragalus agrestis	b37	a-	b30	.08	-	.81

Type	Species	Nested Frequency			Average Cover %		
		'95	'00	'10	'95	'00	'10
F	Cirsium sp.	c95	a-	b10	1.53	-	.54
F	Collinsia parviflora (a)	-	-	8	-	-	.30
F	Equisetum laevigatum	72	90	70	.33	1.66	.47
F	Erigeron sp.	3	5	12	.00	.00	.07
F	Gentiana sp.	a-	a-	b20	-	-	.33
F	Lepidium sp. (a)	-	-	1	-	-	.00
F	Myosotis alpestris	a13	b52	a5	.04	.77	.01
F	Potentilla anersina	b200	b199	a23	3.85	5.14	.21
F	Potentilla gracilis	b69	a25	b70	1.56	.44	1.26
F	Ranunculus testiculatus (a)	11	-	-	.18	-	-
F	Senecio multilobatus	a-	a-	b29	-	-	.45
F	Senecio pauperculus	b97	a-	a-	2.75	-	-
F	Sisyrinchium idahoensis	b104	a-	a-	1.24	-	-
F	Stellaria longipes	5	-	10	.01	.00	.33
F	Taraxacum officinale	c316	a30	b67	8.56	.78	1.10
F	Townsendia incana	-	-	3	-	-	.03
F	Tragopogon dubius	-	-	4	-	-	.03
F	Viola adunca	b124	c171	a3	2.32	3.75	.03
Total for Annual Forbs		11	0	9	0.18	0	0.30
Total for Perennial Forbs		1404	621	521	28.44	13.61	11.07
Total for Forbs		1415	621	530	28.63	13.61	11.38

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

BASIC COVER--

Management unit 08B, Study no: 12

Cover Type	Average Cover %		
	'95	'00	'10
Vegetation	69.33	70.35	67.77
Litter	76.84	86.00	77.80
Cryptogams	5.28	4.85	0
Bare Ground	0	.18	.48

SOIL ANALYSIS DATA --

Management unit 8B, Study no: 12, Study Name: Big Meadow

Effective rooting depth (in)	pH	clay loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
35.4	7.4	34.0	33.7	32.3	6.1	5.5	256.0	1.2

PELLET GROUP DATA--

Management unit 08B, Study no: 12

Type	Quadrat Frequency			Days use per acre (ha)	
	'95	'00	'10	'00	'10
Rabbit	-	-	5	-	-
Elk	-	1	3	-	-
Deer	-	1	2	-	21 (51)
Cattle	21	2	40	11 (27)	164 (405)