

Trend Study 24-13-08

Study site name: Jones Corral .

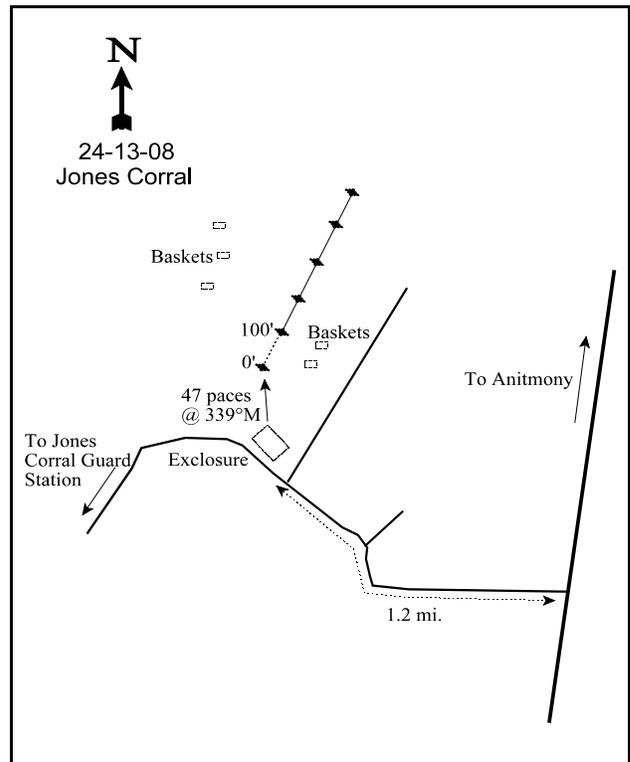
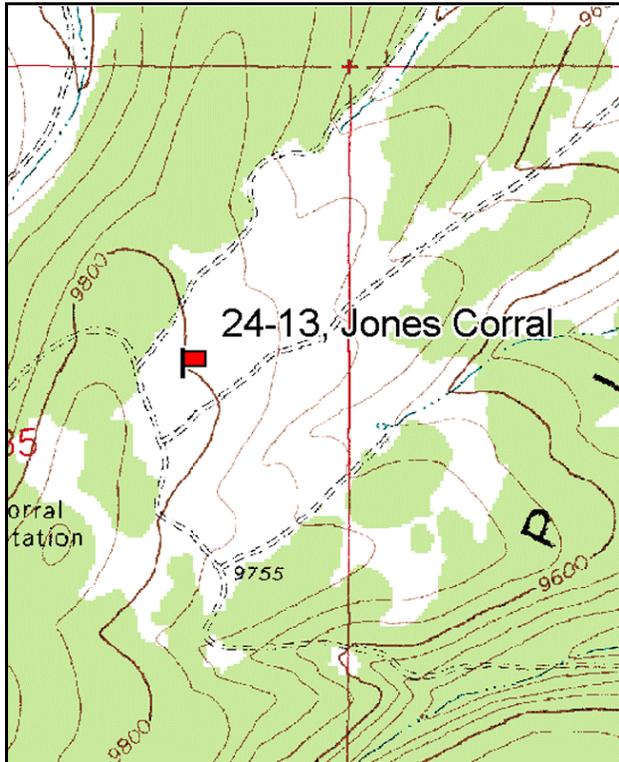
Vegetation type: Mountain Meadow .

Compass bearing: frequency baseline ~40 degrees magnetic.

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

LOCATION DESCRIPTION

From the town of Antimony, drive on Mt. Dutton road for approximately 10 miles towards the Jones Corral Guard Station to a fork. Turn right (west) and drive 1.2 miles towards the guard station. Stop at the enclosure on the right side of the road. From the northwest corner of the enclosure walk 47 paces at 339 degrees magnetic to the 0' stake. The 0' stake is marked by browse tag #162.



Map Name: Mt. Dutton

Diagrammatic Sketch

Township 31S, Range 3W, Section 35

GPS: NAD 83, UTM 12S 398143 E, 4214679 N

## DISCUSSION

### Jones Corral - Trend Study 24-13

#### Study Information

This study was established in 2003. It samples a mountain meadow surrounded by aspen (*Populus tremuloides*) about one-half mile northeast of the Jones Corral Forest Service guard station [elevation: 9,800 feet (2,987 m), slope: 5%, aspect: northeast]. The small Jones Corral enclosure is found about 200 feet to the southeast of the site. This site replaces the Suicide trend study (24-5), that was suspended in 2003. The Jones Corral site samples an area which receives heavy elk use, especially during the spring. A long term grazing study was established on this area by the Division of Wildlife Resources in 1993 and continued until 2000 to quantify elk and cattle use. Pellet group data from that study estimated an 8 year average (1993-2000) of 53 elk days use/acre per year (131 edu/ha), mostly from spring use. Livestock use had an 8 year average of 40 days use/acre (99 cdu/ha). The highest use occurred between 1993 and 1998 with an average of 47 cow days use/acre (116 cdu/ha). Use by cattle declined to 16 days use/acre (40 cdu/ha) in 1999 and 23 (57 cdu/ha) in 2000. Pellet group transect data estimated elk use was to be high in 2003 (58 edu/acre:143 edu/ha) and 2008 (52 edu/acre:127 edu/ha). Deer use was estimated to be light in 2003 (3 ddu/acre:7 ddu/ha) and 2008 (13 ddu/acre:31 ddu/ha). The area is also grazed by cattle during the summer and use was estimated to be moderate in 2003 (23 cdu/acre:57 cdu/ha) and 2008 (34 cdu/acre:84 cdu/ha).

#### Soil

Soil at the site is moderately deep with an effective rooting depth of nearly 13 inches. Parent material is basalt. Soil texture is a loam which is slightly acidic in reaction (pH 6.47). Organic matter is high at 3.4%. Phosphorous is low at only 7 ppm, values less than 6 ppm have low availability for plant growth and development (Tiedemann and Lopez 2004). Relative combined vegetation and litter cover was 55% in 2003 and 63% in 2008. The relative combined rock and pavement cover was 21% in 2003 and 17% in 2008. The relative bare ground cover decreased from 23% in 2003 to 20% in 2008. Some localized erosion is evident but it is not severe. There is considerable soil disturbance by gopher activity. The erosion condition rating class was determined to be stable in 2003 and 2008.

#### Browse

This area is summer range so shrubs are not the key aspect. The only shrubs found on the site were a few mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*).

#### Herbaceous Understory

The herbaceous understory is diverse and abundant but composition and production are poor. Production estimates from the grazing study of this area estimated herbaceous production between 1,400 and 1,900 lbs/acre between 1995 and 1999, averaging 1,702 lbs/acre. Drought conditions in 2000, especially during the spring period (April-June), reduced herbaceous production to only 523 pounds/acre, a 3 fold decrease. Considering the elevation at this site, proximity to aspen, and site potential, herbaceous production should be much higher.

Perennial grasses provided about 21% cover in 2003, 17% cover in 2008, with smooth brome (*Bromus inermis*), Kentucky bluegrass (*Poa pratensis*), Sandberg bluegrass (*Poa secunda*), subalpine needlegrass (*Stipa columbiana*), and Letterman needlegrass (*Stipa lettermani*) providing nearly all of the grass cover. Of these species, Sandberg bluegrass was the most abundant, in 2003, providing 45% of the total grass cover, but decreased significantly by 2008 representing only 18% of the total grass cover. Forbs produced nearly as much cover as grasses with forbs providing nearly 17% cover in 2003, and 26% cover in 2008. However, composition was also poor with the most abundant species being low growing increasers such as rose pussytoes (*Antennaria rosea*), Pacific aster (*Aster chilensis*), cinquefoil (*Potentilla gracilis*), white clover (*Trifolium repens*), and dandelion (*Taraxacum officinale*). All of these species are increasers under heavy

grazing pressure.

2008 TREND ASSESSMENT

The trend for browse is stable with the shrub species mountain big sagebrush existing at very low densities (20 plants/acre). This site is summer range so shrubs are not the key component. The trend for grasses is considered to be stable. The sum of nested frequency for perennial grasses did not change, but there was a shift in the dominant species. The nested frequency of the dominant grass species, sandberg bluegrass, and subalpine needlegrass significantly decreased (subalpine needlegrass was not encountered in 2008). The nested frequency of smooth brome, Kentucky bluegrass, and Letterman needlegrass significantly increased. The trend for forbs is slightly up with the forb population being diverse, but the species composition continuing to be poor. Nearly all of the common perennial forbs are low growing and increasers under heavy grazing. However, the sum of nested frequency of total perennial forbs increased significantly, as did the total perennial forb cover.

browse - stable (0)

grass - stable (0)

forb - slightly up (+1)

HERBACEOUS TRENDS --

Management unit 24 , Study no: 13

T y p e	Species	Nested Frequency		Average Cover %	
		'03	'08	'03	'08
G	Bromus inermis	a <sub>113</sub>	b <sub>201</sub>	3.07	4.85
G	Carex sp.	7	1	.06	.00
G	Koeleria cristata	a <sup>-</sup>	b <sub>13</sub>	-	.08
G	Phleum pratense	a <sup>-</sup>	b <sub>15</sub>	-	.20
G	Poa pratensis	a <sub>72</sub>	b <sub>142</sub>	2.66	3.29
G	Poa secunda	b <sub>299</sub>	a <sub>161</sub>	9.45	3.05
G	Sitanion hystrix	b <sub>24</sub>	a <sub>10</sub>	.60	.15
G	Stipa columbiana	b <sub>53</sub>	a <sup>-</sup>	2.38	-
G	Stipa comata	-	2	-	.00
G	Stipa lettermani	a <sub>100</sub>	b <sub>167</sub>	2.44	5.23
G	Trisetum spicatum	b <sub>26</sub>	a <sup>-</sup>	.30	-
Total for Annual Grasses		0	0	0	0
Total for Perennial Grasses		694	712	20.98	16.87
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F	Achillea millefolium	a <sup>-</sup>	b <sub>22</sub>	-	.20
F	Agoseris glauca	a <sub>4</sub>	b <sub>12</sub>	.01	.11
F	Antennaria rosea	a <sub>88</sub>	b <sub>138</sub>	2.29	4.86
F	Androsace septentrionalis (a)	-	1	-	.00
F	Arabis sp.	-	4	-	.02
F	Aster chilensis	a <sub>100</sub>	b <sub>163</sub>	1.42	3.77
F	Astragalus sp.	b <sub>92</sub>	a <sup>-</sup>	3.06	-
F	Collinsia parviflora (a)	16	9	.05	.02

Type	Species	Nested Frequency		Average Cover %	
		'03	'08	'03	'08
F	Erigeron eatonii	<sub>a</sub> 27	<sub>b</sub> 155	.32	3.70
F	Erigeron pumilus	2	-	.01	-
F	Lomatium sp.	<sub>a</sub> -	<sub>b</sub> 10	-	.03
F	Polygonum douglasii (a)	<sub>a</sub> 21	<sub>b</sub> 133	.09	.38
F	Potentilla gracilis	70	72	1.59	2.13
F	Potentilla sp.	<sub>a</sub> -	<sub>b</sub> 27	-	1.09
F	Taraxacum officinale	<sub>a</sub> 3	<sub>b</sub> 191	.00	4.48
F	Trifolium repens	<sub>a</sub> 248	<sub>b</sub> 372	7.69	5.35
Total for Annual Forbs		37	143	0.14	0.41
Total for Perennial Forbs		634	1166	16.43	25.77
Total for Forbs		671	1309	16.56	26.19

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

#### BROWSE TRENDS --

Management unit 24 , Study no: 13

Type	Species	Strip Frequency		Average Cover %	
		'03	'08	'03	'08
B	Artemisia tridentata vaseyana	0	1	-	.03
Total for Browse		0	1	0	0.03

#### BASIC COVER --

Management unit 24 , Study no: 13

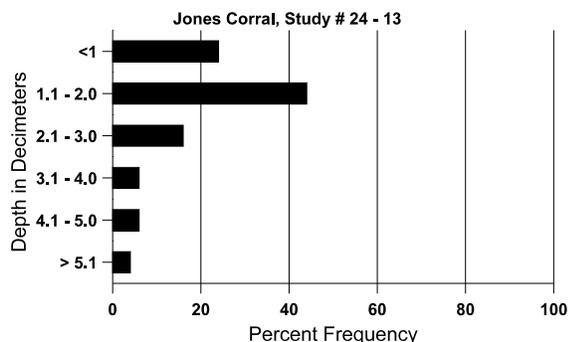
Cover Type	Average Cover %	
	'03	'08
Vegetation	44.15	53.25
Rock	8.19	10.01
Pavement	13.68	8.84
Litter	12.75	13.53
Cryptogams	.99	.03
Bare Ground	23.89	21.48

SOIL ANALYSIS DATA --

Management unit 24, Study no: 13, Study Name: Jones Corral

Effective rooting depth (in)	Temp °F (depth)	pH	loam			%OM	PPM P	PPM K	dS/m
			%sand	%silt	%clay				
12.7	57.4 (13.2)	6.5	42.6	32.7	24.7	3.4	7.0	483.2	0.6

Stoniness Index



PELLET GROUP DATA --

Management unit 24 , Study no: 13

Type	Quadrat Frequency		Days use per acre (ha)	
	'03	'08	'03	'08
Sheep	-	1	-	-
Rabbit	1	1	-	-
Turkey	-	1	-	-
Elk	30	25	58 (144)	52 (127)
Deer	6	10	3 (7)	13 (31)
Cattle	5	18	23 (57)	34 (84)

BROWSE CHARACTERISTICS --

Management unit 24 , Study no: 13

		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 tridentata vaseyana</i>												
03	0	-	-	-	-	-	0	0	-	-	0	10/18
08	20	-	20	-	-	-	0	0	-	-	0	-/-
<i>Chrysothamnus viscidiflorus viscidiflorus</i>												
03	0	-	-	-	-	-	0	0	-	-	0	-/-
08	0	-	-	-	-	-	0	0	-	-	0	11/23