Trend Study 18-14-97

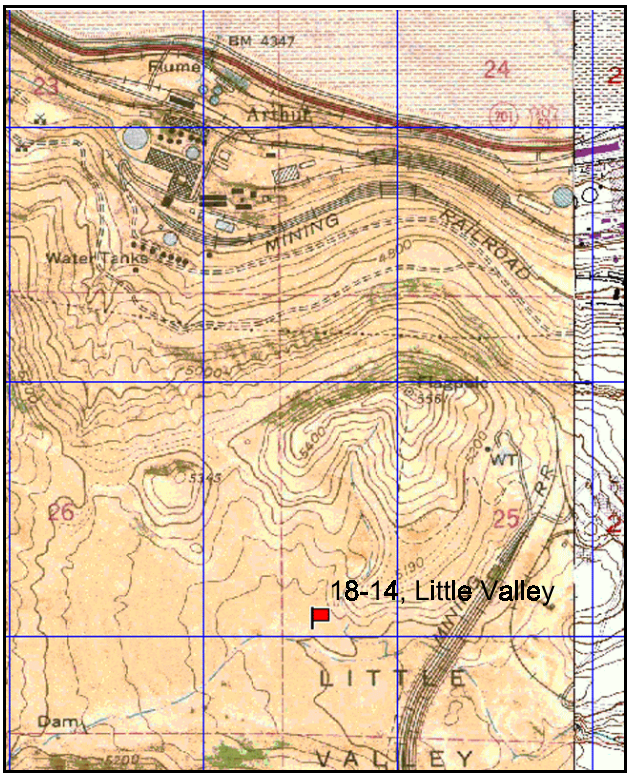
Study site name: Little Valley . Vegetation type: Perennial Grass .

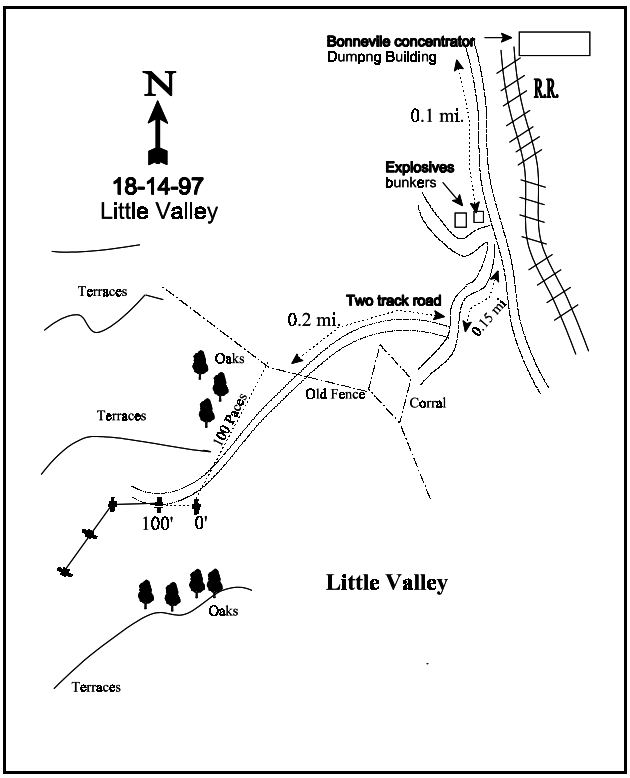
Compass bearing: frequency baseline 285 degrees magnetic (Lines 3-4 @ 240°M).

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

LOCATION DESCRIPTION

From the Bonneville concentrator, proceed south for 0.1 miles along the railroad tracks to a three-way fork. Take the middle fork past some explosives bunkers for 0.15 miles to an old corral. Just before the corral is a two track road. Take this road for 0.2 miles to a bend in the old fence line. Bear southwesterly for approximately 100 paces from the bend in the fence. The study is located in the flat, between terraces. The study markers are half high fenceposts.





Map Name: Farnsworth Peak Diagrammatic Sketch

Township 1S , Range 3W , Section 25 GPS: NAD 27, UTM 12S 4506012 N 403957 E

DISCUSSION

Little Valley - Trend Study No. 18-14

***SUSPENDED - This site was suspended in 2002. Text and tables from the 1997 report have been retained and are found below.

This is a new study site established on Kennecott property in Little Valley. It samples a grassland type in an area that has been rehabilitated by terracing and limited seeding treatment. The slope is negligible but it has a slight south aspect and an elevation of about 5,000 feet. Plant composition is mostly weedy in habit. As described in the 1990 report, it had been previously grazed by cattle and more recently by sheep in early spring. Deer use occurs year-round. Elk use was mainly in winter and spring. A pellet-group transect read in conjunction with the trend study in 1997 indicated elk use at 48 elk days use/acre and deer use at less than one.

The soil was visibly described as a hard packed clay in the upper 6 to 12 inches. Below the packed layer, the soil was more loam-like and more loosely packed. Rock and pavement cover is less than 1%. Soil textural analysis indicate a clay loam soil with a moderately acidic pH (5.8) which could be limiting to some plant species. Effective rooting depth was almost 12 inches with a soil temperature of 62°F at 14 inches in depth. Because of the good herbaceous cover and litter cover, very little erosion was noticeable on the site.

Since 1978, the site was dominated by annual rye and other weedy species. Western wheatgrass had a higher nested frequency than annual rye which is still true, but currently western wheatgrass has shown a significantly decreased abundance (lower sum of nested frequency number). In 1990 they were about the only grasses present on the site. Curlycup gumweed and ragweed remain very common, but surprisingly, no whitetop was identified in 1990. From the 1997 sampling, some of the more weedy species decreased, but others increased to take their place. Currently, 91% of the grasses cover is contributed by annuals, mostly annual rye and 90% of the forb cover is furnished by annual and perennial weedy species. Therefore, about 90% of the total herbaceous cover (there are no shrubs) is furnished by weedy species. Ragweed by itself provides 42% of the forb cover. There is still no browse available in much of the valley.

1990 APPARENT TREND ASSESSMENT

Soil trend appears stable even with 38% bare soil. The lack of slope, good protective cover from herbaceous cover and litter, and terracing help minimize erosion. The trend for shrubs is not applicable for there are no shrubs on the site. With the prominence of undesirable weeds and lack of diversity, the herbaceous understory vegetative trend appears downward.

1997 TREND ASSESSMENT

Soil trend is up with bare soil declining to 7%, and good herbaceous and litter cover. There is no trend for shrubs as they do not occur on the site. The trend for the herbaceous understory is down because 91% of the grass cover is from weedy annual species and 90% of the forb cover is from weedy annual and perennial species. One of the few good species on the site is western wheatgrass which has declined significantly in nested frequency since the 1990 reading.

TREND ASSESSMENT
soil - up (5)
browse - no shrubs on site (NA)
herbaceous understory - down, and mostly weeds (90% cover) (1)

HERBACEOUS TRENDS --
Herd unit 18 , Study no: 14

Type	Species	Nested Frequency '90	Nested Frequency '97	Quadrat Frequency '90	Quadrat Frequency '97	Average Cover % '97
G	Agropyron smithii	$_{b}$266	$_{a}$190	81	68	3.88
G	Bromus japonicus (a)	-	254	-	81	6.71
G	Bromus tectorum (a)	-	21	-	11	.08
G	Poa fendleriana	-	5	-	2	.03
G	Poa pratensis	$_{a}$1	$_{b}$40	1	14	1.81
G	Poa secunda	-	6	-	3	.01
G	Secale cereale (a)	143	110	57	37	8.12
Total for Annual Grasses		143	385	57	129	14.92
Total for Perennial Grasses		267	241	82	87	5.75
Total for Grasses		410	626	139	216	20.67
F	Alyssum alyssoides (a)	-	2	-	1	.00
F	Ambrosia psilostachya	$_{a}$48	$_{b}$165	21	52	9.80
F	Aster chilensis	$_{b}$15	$_{a}$-	10	-	-
F	Cardaria draba	$_{a}$-	$_{b}$31	-	13	.14
F	Convolvulus arvensis	$_{a}$9	$_{b}$45	3	20	.40
F	Comandra pallida	1	4	1	1	.03
F	Epilobium brachycarpum (a)	-	148	-	61	3.50
F	Grindelia squarrosa	$_{b}$213	$_{a}$129	72	52	2.25
F	Helianthus annuus (a)	$_{a}$12	$_{b}$69	6	30	3.22
F	Lactuca serriola	$_{a}$-	$_{b}$35	-	18	.34
F	Linaria dalmatica	3	6	2	2	.15
F	Machaeranthera canescens	$_{b}$22	$_{a}$-	10	-	-
F	Nicotiana attenuata (a)	16	-	7	-	-
F	Polygonum douglasii (a)	-	129	-	48	2.12
F	Rumex crispus	$_{a}$-	$_{b}$41	-	19	.52
F	Tragopogon dubius	$_{a}$7	$_{b}$41	4	19	.70
Total for Annual Forbs		28	348	13	140	8.85
Total for Perennial Forbs		318	497	123	196	14.36
Total for Forbs		346	845	136	336	23.21

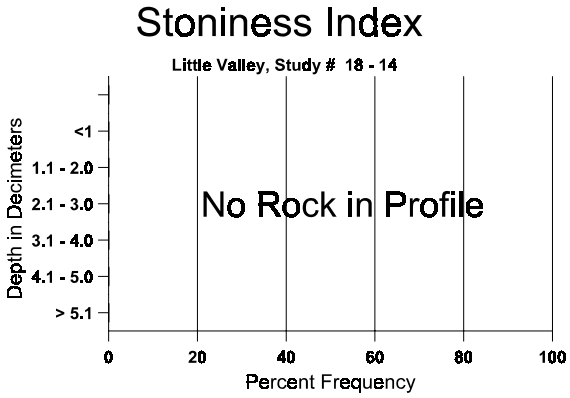
Values with different subscript letters are significantly different at alpha = 0.10

BASIC COVER --
Herd unit 18 , Study no: 14

Cover Type	Nested Frequency '97	Average Cover % '90	'97
Vegetation	376	4.75	58.24
Rock	9	0	.07
Pavement	21	.25	.09
Litter	390	53.00	59.97
Cryptogams	115	4.00	4.53
Bare Ground	193	38.00	6.90

SOIL ANALYSIS DATA --
Herd Unit 18, Study no: 14, Little Valley

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
11.4	61.7 (13.8)	5.8	35.6	38.8	25.6	1.5	48.9	192.0	.4



PELLET GROUP FREQUENCY --
Herd unit 18 , Study no: 14

Type	Quadrat Frequency '97	Pellet Transect: Pellet Groups per Acre '97	Pellet Transect: Days Use per Acre (ha) '97
Elk	28	923	71 (175)
Deer	3	9	1 (2)