

LOWER DOG FLAT - TREND STUDY NO. 25A-8-09

Vegetation Type: Chained, Seeded P-J

Range Type: Crucial Deer Winter, Substantial Elk Winter

NRCS Ecological Site Description: Not Available

Land Ownership: BLM

Elevation: 8,100 ft (2,469 m)

Aspect: South

Slope: 13%-15%

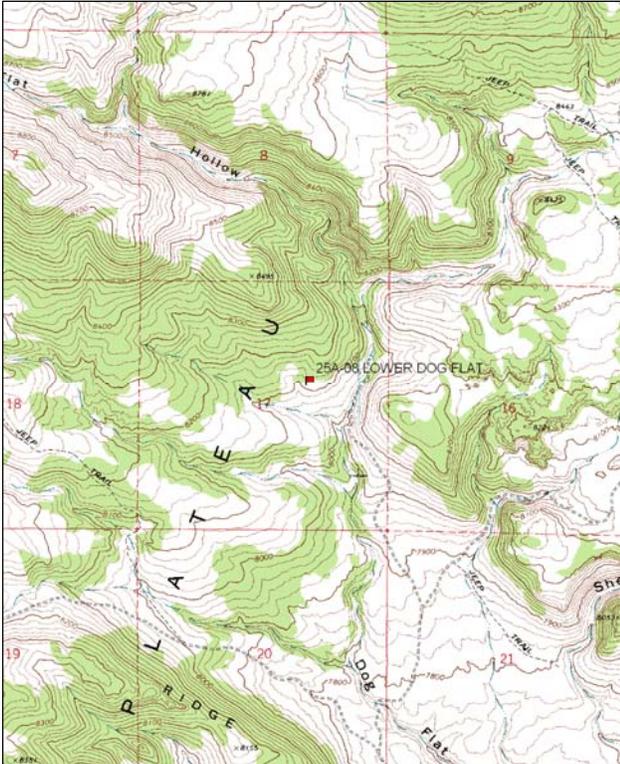
Transect bearing: 165 degrees magnetic

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

Directions:

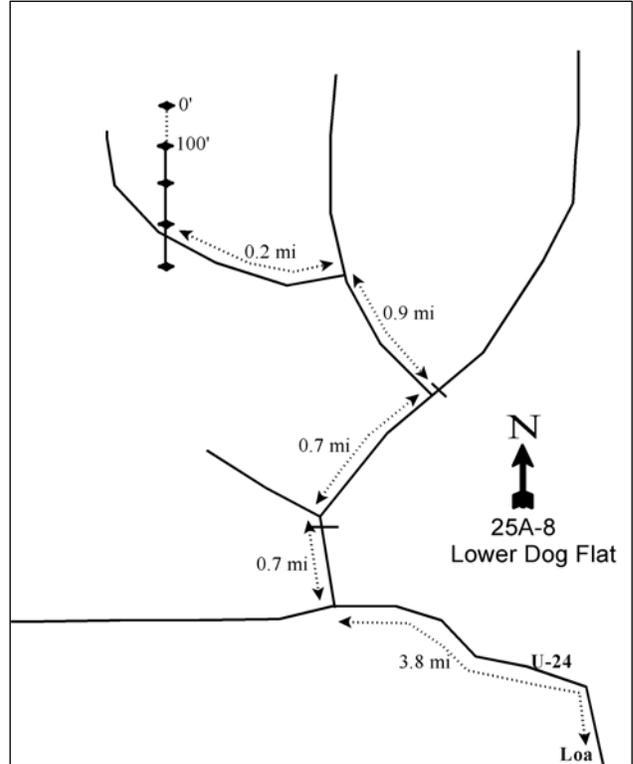
From Loa, go 3.8 miles northwest on U-24 (0.9 miles beyond mile marker 49). Turn right (north) on a gravel road and proceed 0.7 miles. Just beyond the cattleguard turn right and go another 0.7 miles. Turn left just before another cattleguard and go 0.9 miles. At the bottom of the hill, a road forks off to the left, through a wash, up a steep hill and west into the chaining. Take this road 0.2 miles and stop at a 3' rebar post on the right side of the road marking the 300' stake of the baseline. The 0-foot baseline stake is marked by browse tag #7188.

Map Name: Loa, Utah



Township: 27S, Range: 2E, Section: 17

Diagrammatic Sketch:



GPS: NAD 83, UTM 12S 437801 E 4257498 N

LOWER DOG FLAT - TREND STUDY NO. 25A-8

Site Information

Site Description: This study is located on the eastern side of the Awapa Plateau in a chaining completed in 1980. Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) and broom snakeweed (*Gutierrezia sarothrae*) are the principal species, while seeded species did not establish well. The area was retreated with a dixie harrow as part of the Seven Mile WRI project ([Project# 594](#)) in the fall of 2006 to rejuvenate the sagebrush and improve the grass/forb composition with a native/non-native seed mix of grass, forb, and shrubs (Table - Seed Mix). The study transect intersected across the treatment edge with two of the frequency belts inside the treatment area and three of the frequency belts outside the treatment area. As part of the BLM’s Seven Mile allotment, cattle graze the area for about 20 days in May under a deferred grazing system. Pellet group data estimated moderate deer use from 1999 to 2004 and heavy use in 2009. Elk and cattle use was light in all sample years (Tables – Pellet Group Data).

Browse: Mountain big sagebrush is the key browse species and all sagebrush has been classified as mountain big sagebrush although some individuals resemble black sagebrush (*Artemisia nova*). It has maintained a good population with moderate decadence, but recruitment has decreased steadily. Broom snakeweed has periodically had very high densities (Table - Browse Characteristics).

Herbaceous Understory: Grass composition is dominated by blue grama (*Bouteloa gracilis*) which has provided more than 80% of grass cover since 1999. Forbs are rare on this site and have provided less than 1% cover since 1999. Seeded species have not established well (Table - Herbaceous Trends).

Soil: The soil is classified as a clay loam with a neutral pH (7.1) (Table - Soil Analysis Data). A dense hardpan is located at about a foot in depth. Bare ground has ranged from 13% to 22% since 1985 (Table - Basic Cover). The soil erosion condition was classified as stable in 2004 and 2009.

SEED MIX

Management unit 25A; study no. 8

Project name: Seven Mile - Low elevation

WRI Database #: 594

Mix lot # sr-tt-smle-07	Size (acre):		4400
Seed type	lbs in mix	lbs/acre	
Crested Wheatgrass 'Ephraim'	2200	0.50	
Crested Wheatgrass 'Hycrest'	2220	0.50	
Pubescent Wheatgrass	2200	0.50	
Big Bluegrass 'Sherman'	1169	0.27	
Great Basin Wildrye 'Trailhead'	3535	0.80	
Russian Wildrye	70	0.02	
Sheep Fescue	1100	0.25	
Yellow Sweetclover	1100	0.25	
Blue Flax	1433	0.33	
Alfalfa 'Ladak'	2200	0.50	
Sandberg Bluegrass 'Toole MT'	1094	0.25	
Small Burnet 'Delar'	8800	2.00	
Annual Sunflower--Millard UT	140	0.03	
Russian Wildrye	4350	0.99	
TOTAL:	31611	7.18	

Trend Assessments

Browse:

- **1985 to 1991 - slightly up (+1):** Mountain big sagebrush density increased 17% due to an increase in the recruitment of young plants from 27% to 40% of the population. Decadence of mountain big sagebrush decreased slightly from 15% to 13%.
- **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. Mountain big sagebrush decadence remained similar at 15%, but recruitment of young plants decreased substantially to 12%.
- **1999 to 2004 - stable (0):** Mountain big sagebrush densities are similar to past years. Decadence has increased to 21% and recruitment is low at 3%.
- **2004 to 2009 - down (-2):** Mountain big sagebrush density decreased 23%. Decadence is at 18% and recruitment is still low at 2%.

Grass:

- **1985 to 1991 – slightly down (-1):** The sum of nested frequency of perennial grasses decreased 14%. Blue grama and bottlebrush squirreltail (*Sitanion hystrix*) are the most frequent species.
- **1991 to 1999 – slightly up (+1):** The sum of nested frequency of perennial grasses increased 17% and cover is at 9%. Blue grama accounts for 82% of grass cover.
- **1999 to 2004 - down (-2):** The sum of nested frequency of perennial grasses decreased 37%, with a slight decrease in cover to 8%. Blue grama provided 92% of grass cover.
- **2004 to 2009 – slightly down (-1):** The sum of nested frequency of perennial grasses decreased 14%, and cover decreased to 4%. Blue grama provides 91% of grass cover.

Forb:

- **1985 to 1991 – slightly down (-1):** The forb component is poor so even small changes affect the trend. The sum of nested frequency of perennial forbs decreased by 14%. No one species is especially common.
- **1991 to 1999 – slightly up (+1):** The sum of nested frequency of perennial forbs increased 17%. Perennial forb cover is below 1%.
- **1999 to 2004 - down (-2):** The sum of nested frequency of perennial forbs decreased 37% and cover decreased to near 0%.
- **2004 to 2009 – slightly down (-1):** The sum of nested frequency of perennial forbs decreased 14% and forb cover is still near 0%.

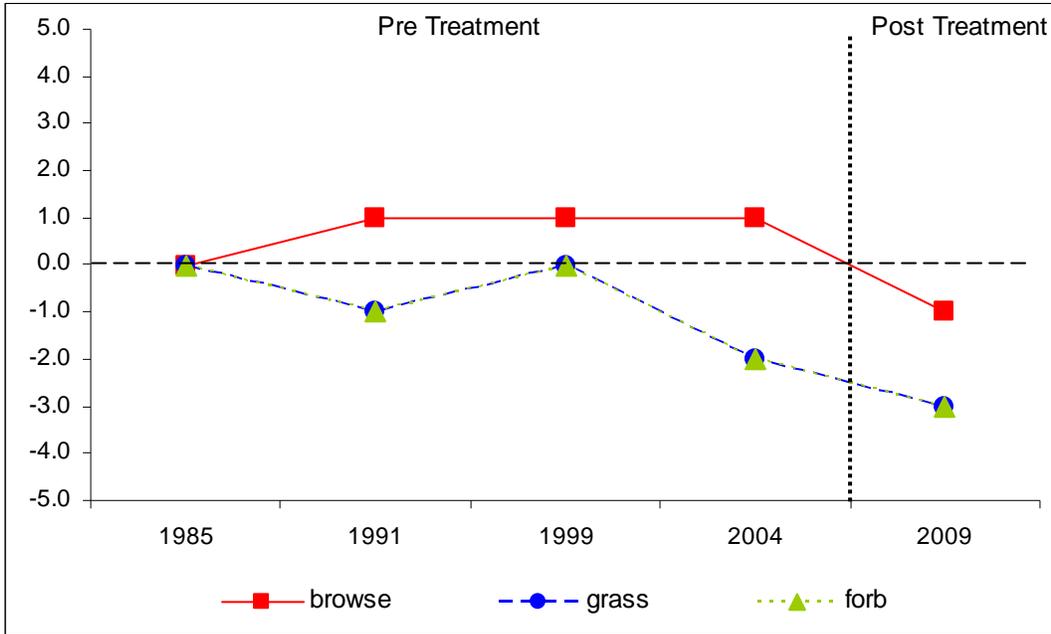
DEER DESIRABLE COMPONENTS INDEX - MID-LEVEL POTENTIAL SCALE --

Management unit 25A, study no: 8

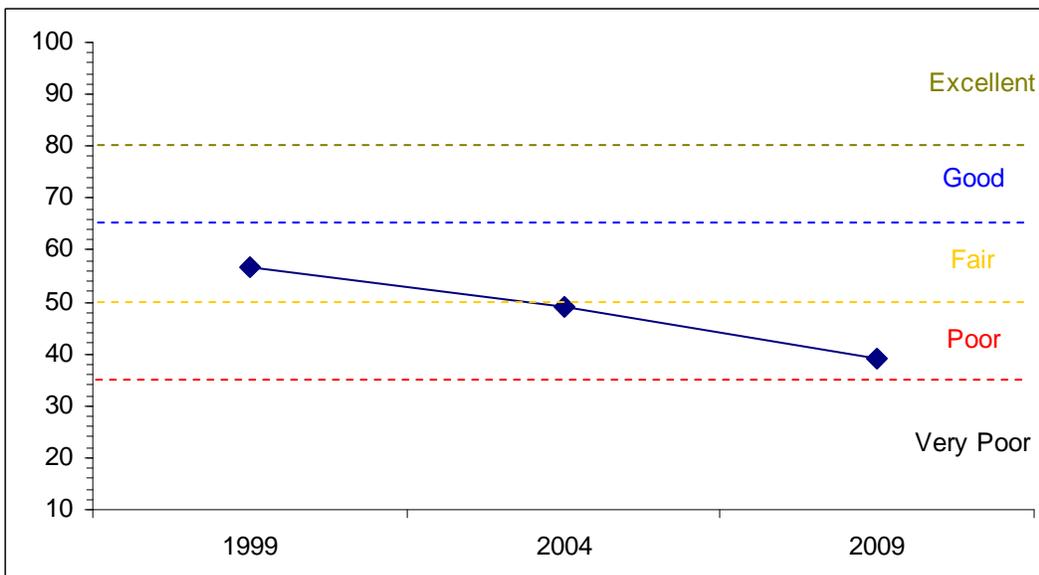
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
99	22.2	10.5	6.0	17.4	0.0	0.5	0.0	56.6	Fair
04	23.1	8.7	1.5	15.7	0.0	0.1	0.0	49.1	Poor-Fair
09	19.7	9.6	1.0	8.8	0.0	0.0	0.0	39.1	Poor

Trend Summary

CUMULATIVE RANGE TREND ASSESSMENT--
Management unit 25A Study no: 8



DEER DESIRABLE COMPONENTS INDEX TREND, MID-LEVEL POTENTIAL
Management unit 25A, Study no: 8



HERBACEOUS TRENDS--
Management unit 25A, Study no: 8

T y P e	Species	Nested Frequency					Average Cover %		
		'85	'91	'99	'04	'09	'99	'04	'09
G	Agropyron cristatum	c43	a-	b14	a-	a-	.07	-	-
G	Agropyron intermedium	6	-	2	-	-	.00	-	-
G	Agropyron sp.	-	7	-	-	-	-	-	-
G	Agropyron spicatum	b26	a-	a-	a-	a-	-	-	-
G	Bouteloua gracilis	a115	b166	c215	bc193	ab162	7.15	7.20	4.01
G	Bromus inermis	c141	a-	b11	a-	a-	.13	-	-
G	Koeleria cristata	-	-	4	-	5	.03	-	.09
G	Oryzopsis hymenoides	-	-	-	4	2	-	.03	.06
G	Poa fendleriana	2	-	3	-	-	.00	-	-
G	Sitanion hystrix	a41	b149	b137	a49	a43	1.27	.61	.25
G	Stipa comata	-	-	3	-	-	.03	-	-
G	Stipa pinetorum	b17	ab13	a3	a-	a-	.00	-	-
Total for Annual Grasses		0	0	0	0	0	0	0	0
Total for Perennial Grasses		391	335	392	246	212	8.71	7.85	4.41
Total for Grasses		391	335	392	246	212	8.71	7.85	4.41
F	Androsace septentrionalis (a)	-	-	b27	b16	a3	.14	.04	.00
F	Antennaria rosea	-	-	-	3	-	-	.00	-
F	Arabis demissa	b27	b20	a3	a2	a-	.00	.00	-
F	Astragalus sp.	3	-	-	4	-	-	.00	-
F	Chaenactis douglasii	3	-	-	-	-	-	-	-
F	Chenopodium sp. (a)	-	-	-	4	-	-	.01	-
F	Cryptantha sp.	b16	b10	a-	ab5	a-	-	.01	-
F	Descurainia pinnata (a)	-	10	5	6	-	.01	.01	-
F	Erigeron pumilus	ab16	bc22	c40	a5	ab5	.21	.01	.02
F	Eriogonum ovalifolium	6	3	3	3	-	.03	.00	-
F	Machaeranthera canescens	2	-	-	-	-	-	-	-
F	Medicago sativa	b16	a-	a-	a-	a-	-	-	-
F	Melilotus officinalis	8	-	-	-	-	-	-	-
F	Penstemon comarrhenus	1	-	-	-	-	-	-	-
F	Phlox longifolia	a4	b22	a4	a3	a2	.01	.01	.00
F	Salsola iberica (a)	-	-	-	-	3	-	-	.01
F	Salsola pestifer (a)	2	-	-	-	-	-	-	-
F	Sanguisorba minor	3	-	-	-	-	-	-	-
F	Unknown forb-perennial	b11	a-	a-	a-	a-	-	-	-
Total for Annual Forbs		2	10	32	26	6	0.15	0.06	0.01
Total for Perennial Forbs		116	77	50	25	7	0.25	0.05	0.02
Total for Forbs		118	87	82	51	13	0.41	0.11	0.03

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

BROWSE TRENDS--

Management unit 25A, Study no: 8

Type	Species	Strip Frequency			Average Cover %		
		'99	'04	'09	'99	'04	'09
B	Artemisia nova	1	0	0	.00	-	-
B	Artemisia tridentata vaseyana	93	92	89	17.72	18.47	15.73
B	Gutierrezia sarothrae	84	75	38	1.20	2.07	.17
B	Opuntia sp.	2	2	3	.00	.00	.00
B	Pediocactus simpsonii	0	2	0	-	.03	-
B	Pinus edulis	0	0	1	-	-	.03
Total for Browse		180	171	131	18.93	20.59	15.95

CANOPY COVER, LINE INTERCEPT--

Management unit 25A, Study no: 8

Species	Percent Cover	
	'04	'09
Artemisia tridentata vaseyana	21.50	15.80
Gutierrezia sarothrae	1.70	.40

KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 25A, Study no: 8

Species	Average leader growth (in)	
	'04	'09
Artemisia tridentata vaseyana	1.7	1.2

POINT-QUARTER TREE DATA--

Management unit 25A, Study no: 8

Species	Trees per Acre			Average diameter (in)		
	'99	'04	'09	'99	'04	'09
Juniperus scopulorum	6	<18	<18	3.3	-	-
Pinus edulis	7	25	22	2.5	1.9	2.7

BASIC COVER--

Management unit 25A, Study no: 8

Cover Type	Average Cover %				
	'85	'91	'99	'04	'09
Vegetation	8.00	7.50	27.16	27.31	20.89
Rock	8.00	29.75	24.86	24.52	20.85
Pavement	33.00	17.25	24.32	22.38	15.73
Litter	37.00	29.75	20.95	22.14	23.79
Cryptogams	0	0	.08	.24	.03
Bare Ground	14.00	15.75	13.14	20.08	21.82

SOIL ANALYSIS DATA --

Management unit 25A, Study no: 8, Study Name: Lower Dog Flat

Effective rooting depth (in)	pH	clay loam			%0M	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
10.7	7.3	43.3	29.4	27.3	2.3	6.7	201.6	0.7

PELLET GROUP DATA--

Management unit 25A, Study no: 8

Type	Quadrat Frequency			Days use per acre (ha)		
	'99	'04	'09	'99	'04	'09
Rabbit	26	43	56	-	-	-
Elk	3	1	2	1 (3)	2 (5)	7 (18)
Deer	10	13	9	17 (43)	21 (53)	61 (150)
Cattle	4	1	2	8 (20)	5 (13)	5 (13)

BROWSE CHARACTERISTICS--

Management unit 25A, Study no: 8

Year	Plants per Acre (excluding seedlings)	Age class distribution			Seedling (plants/acre)	Utilization		% poor vigor	Average Height Crown (in)
		% Young	% Mature	% Decadent		% moderate	% heavy		
<i>Artemisia frigida</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	-	20	0	0	0	-/-
<i>Artemisia nova</i>									
85	0	0	0	-	-	0	0	0	-/-
91	0	0	0	-	-	0	0	0	-/-
99	20	0	100	-	-	100	0	0	5/9
04	0	0	0	-	-	0	0	0	-/-
09	0	0	0	-	-	0	0	0	-/-
<i>Artemisia tridentata vaseyana</i>									
85	5331	27	58	15	5333	1	0	0	18/17
91	6265	40	47	13	866	9	0	5	19/18
99	6180	12	72	15	100	37	17	6	16/26
04	6540	3	76	21	4740	48	17	7	16/28
09	5020	2	81	18	-	26	0	6	15/23
<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	5/6
09	0	0	0	-	-	0	0	0	-/-
<i>Gutierrezia sarothrae</i>									
85	18466	34	66	0	12933	0	0	0	9/9
91	4331	28	58	14	12599	8	0	5	2/3
99	20580	68	31	0	2800	0	0	.09	6/6
04	6800	14	86	0	640	0	0	0	6/8
09	1340	1	99	0	20	0	0	0	6/5

		Age class distribution					Utilization			
Year	Plants per Acre (excluding seedlings)	% Young	% Mature	% Decadent	Seedling (plants/acre)	% moderate	% heavy	% poor vigor	Average Height Crown (in)	
Leptodactylon pungens										
85	133	0	100	0	66	0	0	0	7/7	
91	198	33	33	33	-	33	0	0	3/4	
99	0	0	0	0	-	0	0	0	-/-	
04	0	0	0	0	-	0	0	0	-/-	
09	0	0	0	0	-	0	0	0	-/-	
Opuntia sp.										
85	133	100	0	-	-	0	0	0	-/-	
91	66	100	0	-	-	0	0	0	-/-	
99	40	0	100	-	-	0	0	0	3/7	
04	40	0	100	-	-	0	0	0	3/10	
09	60	0	100	-	-	0	0	0	4/11	
Pediocactus simpsonii										
85	0	0	0	-	-	0	0	0	-/-	
91	0	0	0	-	-	0	0	0	-/-	
99	0	0	0	-	-	0	0	0	-/-	
04	40	50	50	-	-	0	0	0	-/-	
09	0	0	0	-	-	0	0	0	0/1	
Pinus edulis										
85	0	0	0	-	-	0	0	0	-/-	
91	0	0	0	-	-	0	0	0	-/-	
99	0	0	0	-	40	0	0	0	-/-	
04	0	0	0	-	20	0	0	0	-/-	
09	20	0	100	-	20	0	0	0	-/-	