

APPENDIX 1. SUMMARIES OF INFORMATION FROM VEGETATION SAMPLING PLOTS

This is Appendix 1 to the report:

Jones, G.P. 2005. Vegetation on Sand Substrates in the BLM Rawlins and Rock Springs Field Offices, Wyoming. Final Report for Assistance Agreement KAA010012 (Task Order KAF020014). University of Wyoming Natural Diversity Database, Laramie WY.

Plot 02AK01

Sampling Date 6/27/2002 **Cover Type:** BLM Dune
Location T 17 N, R 109 W, Section 6, NE 1/4
UTM 4593284 m N, 604129 m E (NAD 27 12N)
Map name: Antelope Knoll NE 1:24,00
Environment Elevation: 6360 feet Aspect 0 Slope 0
Topo position: Terrace Soil texture: Sandy Loam
Soil features:
Surface deposit: Aeolian

Description

Photos:
Camera 2, roll 1, exposure 17 - S. Madden with pole.

Vegetation:
Plot dominated by graminoids such as *Stipa* (*Hesperostipa*) *cornata* and *Oryzopsis* (*Achnatherum*). Low shrubs (*Chrysothamnus viscidiflorus*, *Ericameria nauseosa*, *Sarcobatus vermiculatus*) occupy a good portion of the plot as well.

Disturbance signs:
Grazing, factory nearby.

Why was plot done?
Determine composition and structure of vegetation on sand substrate.

Uncertainty on measurements:
Identity of grasses (*Stipa* (*Hesperostipa*) *comata*, *Oryzopsis* (*Achnatherum*) *hymenoides*, western whetgrass) uncertain.

Completeness of Species List:

Notes:

Ground Cover

Soil	84	Gravel	2.3	Cobble	0	Boulder	0	Bedrock	0
Litter	14.3	Wood	1.6	DRP*	1.4	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02AK02

Sampling Date 6/27/2002 **Cover Type:** BLM Dune

Location T 16 N, R 109 W, Section 6, NE 1/4

UTM 4583715 m N, 605408 m E (NAD 27 12N)

Map name: Massacre Hill 1:24,00

Environment Elevation: 6200 feet Aspect 214 Slope 1

Topo position: Terrace Soil texture: Sandy Loam

Soil features: Ground very dry with some gravel in it; mostly a sandy loam.

Surface deposit: Aeolian

Description

Photos:

camera 1, roll 1, exp 12 - taken from SE corner of plot.

Vegetation:

Perennial grasses with scattered basin big sagebrush and some perennial grass; greasewood in some locations in plot.

Disturbance signs:

Tracks and droppings from wildlife. North end has a small flooded area.

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

No comments

Completeness of Species List:

No comments

Notes:

Ground Cover

Soil 96.2 Gravel 0.6 Cobble 0 Boulder 0 Bedrock 0

Litter 0.9 Wood 0.3 DRP* 0.9 Lichen 0.1 Moss 0

*DRP = Dead, Rooted

Plot 02AK03

Sampling Date 6/27/2002 **Cover Type:** BLM Dune

Location T 17 N, R 110 W, Section 12, NE 1/4

UTM 4593286 m N, 600461 m E (NAD 27 12N)

Map name: Antelope Knoll NE 1:24,00

Environment Elevation: 6400 feet Aspect 290 Slope 1

Topo position: Toeslope Soil texture: Sandy Loam

Soil features: Quite coarse, some gravel.

Surface deposit: Aeolian

Description

Photos:

Camera 2, roll 1, exp 18 - C. Cooper in plot.

Vegetation:

Stipa (Hesperostip) comata and Oryzopsis (Achnatherum) hymenoides with scattered Artemisia tridentata wyomingensis and occasional Ericameria nauseosa, Chrysothamnus viscidiflorus, Tetradymia candescens, and Sarcobatus vermiculatus. Vegetation homogeneous throughout plot.

Disturbance signs:

Grazing.

Why was plot done?

To determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Completeness of Species List:

Notes:

Ground Cover

Soil	84.8	Gravel	2.4	Cobble	0	Boulder	0	Bedrock	0
Litter	8.5	Wood	2.7	DRP*	1.2	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02AK04

Sampling Date 6/27/2002 **Cover Type:** BLM Dune

Location T 16 N, R 109 W, Section 12 , SE 1/4

UTM 4581945 m N, 603167 m E (NAD 27 12N)

Map name: Antelope Knoll NE 1:24,00

Environment Elevation: 6280 feet Aspect 8 Slope 1

Topo position: Terrace Soil texture: Loamy Sand

Soil features: Basically a sand dune - very sandy.

Surface deposit: Aeolian

Description

Photos:

Vegetation:

Lots of vegetation in this sandy plot is dead or dying. Dominant species appear to be *Artemisia tridentata wyomingensis* and *Sarcobatus vermiculatus*.

Disturbance signs:

Some game tracks and droppings.

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Many of the plants are dead so numbers may be a bit skewed.

Completeness of Species List:

Notes:

Plot moved from random location because it was on gravel. Lots of dead greasewood.

Ground Cover

Soil	82	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	1	Wood	0.4	DRP*	15	Lichen	0.6	Moss	1

*DRP = Dead, Rooted

Plot 02BF01

Sampling Date 6/27/2002 **Cover Type:** BLM Dune

Location T 24 N, R 110 W, Section 32, SE 1/4

UTM 4651480 m N, 590484 m E (NAD 27 12N)

Map name: Blue Forest 1:24,00

Environment Elevation: 6460 feet Aspect 128 Slope 3

Topo position: Terrace Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:

camera 2, roll 1, exp 19 - Cathy with pole.

Vegetation:

This plot was clearly dominated by short shrubs. *Chrysothamnus viscidiflorus*, *Ericameria nauseosa*, *Tetradymia canescens*, and *Sarcobatus vermiculatus* were all common. *Oryzopsis (Achnatherum) hymenoides* and *Stipa (Hesperostipa) comata* were also scattered throughout the plot.

Disturbance signs:

Recently saturated. Soil underneath moist.

Why was plot done?

Uncertainty on measurements:

Ovate waxy shrub could be greasewood; they grow very close together and look somewhat similar. *Stipa* could be Indian Rice Grass and vice versa.

Completeness of Species List:

Notes:

Ground Cover

Soil	84.8	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	13.1	Wood	2	DRP*	2.4	Lichen	0	Moss	0.3

*DRP = Dead, Rooted

Plot 02BF02

Sampling Date 6/27/2002 **Cover Type:** BLM Dune

Location T 24 N, R 110 W, Section 29, SW 1/4

UTM 4653380 m N, 589567 m E (NAD 27 12N)

Map name: Blue Forest 1:24,00

Environment Elevation: 6500 feet Aspect 146 Slope 1

Topo position: Interfluve Soil texture: Sandy Loam

Soil features: Lot's of small pieces of slate.

Surface deposit: Residual

Description

Photos:

camera 1, roll 1, wep 14 - taken from NE corner wih B. Maes working on microplot #8.

Vegetation:

Dominated by *Artemisia tridentata wyomingensis*, *Chrysothamnus viscidiflorus*, and *Pascopyrum smithii*, randomly distributed. Vegetation is short.

Disturbance signs:

Excavation holes, road, animal tracks and droppings.

Why was plot done?

To determine plant composition on sandy substrates.

Uncertainty on measurements:

"Mountain mahogany" may well be some other shrub.

Completeness of Species List:

Notes:

Ground Cover

Soil 88.4 Gravel 1 Cobble 0.2 Boulder 0.1 Bedrock 0

Litter 1 Wood 0.9 DRP* 4 Lichen 0.3 Moss 0

*DRP = Dead, Rooted

Plot 02BF03

Sampling Date 6/28/2002 **Cover Type:** BLM Dune

Location T 24 N, R 110 W, Section 31, SE 1/4

UTM 4651142 m N, 588178 m E (NAD 27 12N)

Map name: Blue Forest 1:24,00

Environment Elevation: 6410 feet Aspect 240 Slope 4

Topo position: Terrace Soil texture: Sandy Loam

Soil features: Sand & silt, possibly with a little clay. Some gravel present.

Surface deposit: Residual

Description

Photos:

camera 2, roll 1, exp 20 - S. Madden in microplot; exp. 21 - S. Madden with pole

Vegetation:

Very open, short low *A.tridentata* (*wyomingensis*?) and *Chrysothamnus viscidiflorus* over *Achnatherum hymenoides*, *Hesperostipa comata*, *Elymus elymoides*. Very dry - grazed.

Disturbance signs:

sheep grazing.

Why was plot done?

To determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Grasses difficult to distinguish. Greasewood may be the same as waxy oval leaf.

Completeness of Species List:

Notes:

Ground Cover

Soil	91.4	Gravel	2.6	Cobble	0	Boulder	0	Bedrock	0
Litter	3.6	Wood	1.4	DRP*	0.9	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02BF04

Sampling Date 6/28/2002 **Cover Type:** BLM Dune
Location T 23 N, R 110 W, Section 6 , NW 1/4
UTM 4650798 m N, 588521 m E (NAD 27 12N)
Map name: Blue Forest 1:24,00
Environment Elevation: 6410 feet Aspect 207 Slope 8
Topo position: Basin Floor Soil texture: Sandy Loam
Soil features: Sand dune.
Surface deposit: Aeolian

Description

Photos:
camera 1, roll 1, exp 15 taken on top of a big mound of dirt from th NE corner of plot.

Vegetation:
Dominant species *A.tridentata* (wyomingensis?) and various grasses all apparently randomly distributed throughout the plot.

Disturbance signs:
Game tracks and small mammal (ground squirrel or pocket goher) burrows.

Why was plot done?
Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Completeness of Species List:

Notes:

Ground Cover

Soil	86.2	Gravel	0	Cobble	0	Boulder	0	Bedrock	0.1
Litter	0.9	Wood	0.2	DRP*	11.8	Lichen	0.5	Moss	0

*DRP = Dead, Rooted

Plot 02DS01

Sampling Date 6/26/2002 **Cover Type:** BLM Dune

Location T 20 N, R 98 W, Section 36 , NE 1/4

UTM 4616583 m N, 717249 m E (NAD 27 12N)

Map name: Desert Springs 1:24,00

Environment Elevation: 6820 feet Aspect 188 Slope 4

Topo position: Foothlope Soil texture: Sandy Loam

Soil features:

Surface deposit: Alluvial

Description

Photos:

Camera 2, roll 1, exp 14 - S. Madden with tapes; exp 15 - S. Madden with pole

Vegetation:

Artemisia tridentata (wyomingensis?) and Achnatherum hymenoides (and other perennial grasses) dominated the aspect of the plot. Many plants were senescent or dead.

Disturbance signs:

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Indian ricegrass, Poa?, dead grass and western wheat may be incorrectly identified in some plots.

Completeness of Species List:

Notes:

Ground Cover

Soil	82	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	18	Wood	1	DRP*	1.7	Lichen	0.4	Moss	0.6

*DRP = Dead, Rooted

Plot 02DS02

Sampling Date 6/26/2002 **Cover Type:** BLM Dune

Location T 19 N, R 98 W, Section 18 , NE 1/4

UTM 4611431 m N, 708974 m E (NAD 27 12N)

Map name: Desert Springs 1:24,00

Environment Elevation: 6820 feet Aspect 128 Slope 6

Topo position: Shoulder Soil texture: Sandy Loam

Soil features:

Surface deposit: Residual

Description

Photos:

camera 1, roll 1, exp 10 - at GPS corner, facing SE.

Vegetation:

A.tridentata wyomingensis was the dominant plant. Achnatherum hymenoides and Elymus lanceolatus were the common herbaceous plants. No pattern was obvious in the distribution of plants.

Disturbance signs:

Small mammal (ground squirrel or pocket gopher) burrows. Ungulate trail through

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Completeness of Species List:

Notes:

Ground Cover

Soil	48	Gravel	0	Cobble	0	Boulder	0	Bedrock	0.3
Litter	2.1	Wood	2.4	DRP*	2.8	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02DS03

Sampling Date 6/26/2002 **Cover Type:** BLM Dune
Location T 19 N, R 98 W, Section 12, SW 1/4
UTM 4612655 m N, 716273 m E (NAD 27 12N)
Map name: Desert Springs 1:24,00
Environment Elevation: 6810 feet Aspect 0 Slope 0
Topo position: Terrace Soil texture: Silty Clay
Soil features: Possibly some overland flow of water in storm events. Cracking soil
Surface deposit: Alluvial

Description

Photos:
camera 2, roll 1, exp 16 - C. Cooper in plot.

Vegetation:
Low, open shrubland dominated by *A.tridentata wyomingensis* over grasses
(*Achnatherum hymenoides*, *Elymus elymoides*, *Elymus smithii*). Shrubs in clumps.
Clayey soil - very dry.

Disturbance signs:
Horses and other herbivory.

Why was plot done?
Determine composition and structure of vegetation on sandy substrates

Uncertainty on measurements:

Completeness of Species List:
Grasses, especially *Poa* and Indian Ricegrass, were difficult to distinguish.

Notes:

Ground Cover

Soil	82.6	Gravel	0	Cobble	0	Boulder	0	Bedrock	3.3
Litter	10.1	Wood	1.6	DRP*	0.8	Lichen	0.6	Moss	0.81

*DRP = Dead, Rooted

Plot 02DS04

Sampling Date 6/26/2002 **Cover Type:** BLM Dune
Location T 19 N, R 98 W, Section 8, SE 1/4
UTM 4611817 m N, 711080 m E (NAD 27 12N)
Map name: Desert Springs 1:24,00
Environment Elevation: 6790 feet Aspect 160 Slope 1
Topo position: Interfluve Soil texture: Sandy Loam
Soil features: Dry.
Surface deposit: Residual

Description

Photos:
camera 1, roll 1, exp 11 - taken from SE corner.

Vegetation:
Sparse *A. tridentata wyomingensis* and *Sarcobatus vermiculatus* over unidentified perennial grasses.

Disturbance signs:
Game tracks and faeces.

Why was plot done?
Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:
no comments

Completeness of Species List:
no comments

Notes:

Ground Cover

Soil	80	Gravel	0	Cobble	0	Boulder	0	Bedrock	0.2
Litter	0.90	Wood	0.1	DRP*	2.6	Lichen	0.3	Moss	0

*DRP = Dead, Rooted

Plot 02QS01

Sampling Date 6/25/2002 **Cover Type:** BLM Dune

Location T 16 N, R 96 W, Section 27 , SW 1/4

UTM 4578870 m N, 734083 m E (NAD 27 12N)

Map name: Barrel Springs SW 1:24,00

Environment Elevation: 6680 feet Aspect 180 Slope 4

Topo position: Foothlope Soil texture: Sandy Loam

Soil features: sand and silt with sand being predominant.

Surface deposit: Alluvial

Description

Photos:

Camera 2, Roll 1, Exp 12 - S. Madden with pole.

Vegetation:

Chrysothamnus viscidiflorus is the dominant species in this plot. Other small shrubs covered small areas of the plot as well Achnatherum hymenoides and Danthonia intermedia are the main herbaceous species.. Vegetation cover of this plot is sparse.

Disturbance signs:

horses, drought

Why was plot done?

Uncertainty on measurements:

Stipa, Indian ricegrass, and Poa secunda are difficult to distinguish.

Completeness of Species List:

Notes:

Ground Cover

Soil	95.4	Gravel	0	Cobble	0.3	Boulder	0	Bedrock	0
Litter	3.2	Wood	0.7	DRP*	1.8	Lichen	0	Moss	0.1

*DRP = Dead, Rooted

Plot 02QS02

Sampling Date 6/25/2002 **Cover Type:** BLM Dune

Location T 16 N, R 96 W, Section 16, SE 1/4

UTM 4582155 m N, 733394 m E (NAD 27 12N)

Map name: Barrel Springs SW 1:24,00

Environment Elevation: 6750 feet Aspect 313 Slope 6

Topo position: Toeslope Soil texture: Sandy Loam

Soil features: sandy

Surface deposit: Residual

Description

Photos:
none taken

Vegetation:
Herbaceous stratum dominated by *Elymus lanceolatus lanceolatus*, with numerous other species. Short, sparse shrub layer of *Atriplex* sp. and other species is present.

Disturbance signs:
Ant hills, old cow manure, trail through plot

Why was plot done?
Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:
No comment

Completeness of Species List:
Seems to be complete.

Notes:

Ground Cover

Soil	97.2	Gravel	0.4	Cobble	0	Boulder	0	Bedrock	0
Litter	1	Wood	0.1	DRP*	2.1	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02QS03

Sampling Date 6/25/2002 **Cover Type:** BLM Dune

Location T 14 N, R 97 W, Section 9, NE 1/4

UTM 4565045 m N, 724470 m E (NAD 27 12N)

Map name: Monument Valley 1:24,00

Environment Elevation: 6940 feet Aspect 170 Slope 5

Topo position: Toeslope Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:

camera 2, roll 1, exp 13 - S. Madden with pole.

Vegetation:

Chrysothamnus viscidiflorus and Ericameria nauseosa over herbaceous layer of Muhlenbergia pungens, Achnatherum hymenoides, and numerous other species.

Disturbance signs:

Horses.

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

Indian ricegrass and Stipa not easily distinguished.

Completeness of Species List:

Notes:

Sandstone bedrock crops out nearby.

Ground Cover

Soil	80.2	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	17.2	Wood	1.1	DRP*	1	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02QS04

Sampling Date 6/25/2002 **Cover Type:** BLM Dune

Location T 15 N, R 97 W, Section 25 , SE 1/4

UTM 4569237 m N, 728873 m E (NAD 27 12N)

Map name: Monument Valley 1:24,00

Environment Elevation: 6700 feet Aspect 78 Slope 0

Topo position: Basin Floor Soil texture: Sandy Loam

Soil features: dry, some gravel

Surface deposit: Residual

Description

Photos:

camera 1, roll 1, exp 9 - facing east

Vegetation:

Sparse vegetation with few species. Shrubby Atriplex sp. is the most common plant. No pattern obvious in the vegetation.

Disturbance signs:

Ungulate tracks and manure

Why was plot done?

Determine composition and structure of vegetation on sandy substrates.

Uncertainty on measurements:

No comment

Completeness of Species List:

No comment

Notes:

Area around plot is more sandy. The species are the same (with a few more grasses) but taller.

Ground Cover

Soil 92.2 Gravel 0.4 Cobble 0 Boulder 0 Bedrock 0

Litter 1.8 Wood 1 DRP* 4.1 Lichen 0 Moss 0

*DRP = Dead, Rooted

Plot 02SH01

Sampling Date 6/18/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 30 , SE 1/4

UTM 4588122 m N, 285446 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7115 feet Aspect 0 Slope 2

Topo position: Toeslope Soil texture: Loamy Sand

Soil features: Deep.

Surface deposit: Aeolian

Description

Photos:

01C2 is photo of S. Madden and C. Cooper with knot. 02C2 is photo of S. Madden, S. Laursen, and C. Cooper. 03C2 is photo of plot with scale. 04C2 is photo of C. Cooper, S. Laursen, and G. Jones.

Vegetation:

This is an open sagebrush shrubland with horsebrush and rabbitbrush. *Artemisia cana cana* is the most common shrub, and the common herbaceous species are *Carex sp.*, *Muhlenbergia pungens*, and *Hesperostipa comata*. Vegetation structure and composition appear to be uniform throughout the plot. Estimated total canopy cover is 60%.

Disturbance signs:

Fire, grazing.

Why was plot done?

To record vegetation composition and cover in 1993 burn area. It illustrates disturbance due to fire. Point #2247.

Uncertainty on measurements:

Stipa could be confused with *Oryzopsis (Achnatherum) hymenoides* - all were recorded as *Stipa* in microplots.

Completeness of Species List:

Notes:

Gently undulating.

Ground Cover

Soil	57	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	39	Wood	1.11	DRP*	5.11	Lichen	0	Moss	0.18

*DRP = Dead, Rooted

Plot 02SH02

Sampling Date 6/19/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 31 , NW 1/4

UTM 4587051 m N, 284925 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7040 feet Aspect 290 Slope 10

Topo position: Footslope Soil texture: Loamy Sand

Soil features: deep

Surface deposit: Aeolian

Description

Photos:

C205 and C206 are photos of S. Laursen in plot.

Vegetation:

Vegetation is low, open sagebrush shrubland (less dense than plot 02SH01), with occasional rabbitbrush. Estimated total canopy cover is 50%. Common species are Artemisia cana cana, Tetradymia canescens, Chrysothamnus viscidiflorus, Purshia tridentata, Hesperostipa comata, Muhlenbergia pungens, Carex sp., and Alyssum

Disturbance signs:

1993 fire, cattle grazing.

Why was plot done?

Demonstrate impact of 1993 fire; illustrative of vegetation disturbance.

Uncertainty on measurements:

fescue vs. poa problematic

Completeness of Species List:

Notes:

Slope and aspect were mixed: slope 290 and 110; aspect 10 and 6. Mix of topographic positions. Undulating dunes.

Ground Cover

Soil	54	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	44	Wood	1.25	DRP*	3.35	Lichen	0	Moss	0.66

*DRP = Dead, Rooted

Plot 02SH03

Sampling Date 6/19/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 31, SW 1/4

UTM 4586595 m N, 284920 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 6980 feet Aspect 162 Slope 21

Topo position: Backslope Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:
none

Vegetation:

Patchy shrub layer of *Artemisia cana*, *Purshia tridentata*, and *Chrysothamnus viscidiflorus* with patchy undergrowth of *Muhlenbergia pungens* and numerous other species. Estimated total canopy cover is 40%.

Disturbance signs:
fire, grazing

Why was plot done?

To characterize unburned vegetation south of the 1993 fire; tried to place at point #904 but without GPS reading, ended up to the southwest.

Uncertainty on measurements:

Estimates for *Stipa* (*Hesperostipa*) *comata* may include some *Oryzopsis* (*Achnatherum*) hymenoides.

Completeness of Species List:

Notes:

Plot includes mix of topographic positions: backslope, footslope, toeslope

Ground Cover

Soil	25.6	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	68	Wood	2.9	DRP*	5.5	Lichen	0	Moss	1.05

*DRP = Dead, Rooted

Plot 02SH04

Sampling Date 6/20/2002 **Cover Type:** BLM Dune

Location T 16 N, R 91 W, Section 1, NW 1/4

UTM 4585832 m N, 283355 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 6940 feet Aspect 160 Slope 2

Topo position: Footslope Soil texture: Loamy Sand

Soil features: Deep and very dry.

Surface deposit: Aeolian

Description

Photos:

0720 was taken from the southern corner of the plot.

Vegetation:

The vegetation is open shrubland dominated by *Artemisia cana cana* and *Purshia tridentata*, with *Chrysothamnus viscidiflorus* and *Ericameria nauseosa*. Common herbaceous species are *Hesperostipa comata* and *Carex. sp.*. The vegetation appears to be homogeneous. Estimated total canopy cover is 60%.

Disturbance signs:

Herbivory; deer, antelope and cattle droppings.

Why was plot done?

Characterize composition and structure of unburned, late successional shrubland.

Uncertainty on measurements:

Completeness of Species List:

Notes:

Ground Cover

Soil	42.8	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	43.5	Wood	2.77	DRP*	10.2	Lichen	0.3	Moss	16.9

*DRP = Dead, Rooted

Plot 02SH05

Sampling Date 6/20/2002 **Cover Type:** BLM Dune

Location T 16 N, R 91 W, Section 1, SW 1/4

UTM 4584133 m N, 283427 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 6880 feet Aspect 68 Slope 6

Topo position: Footslope Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:

1,1,01: photo of southeast part of macroplot; C. Cooper with staff.

Vegetation:

This is a moderately-dense stand of *Artemisia cana* and *Purshia tridentata* (with *Chrysothamnus viscidiflorus* and some *Tetradymia canescens*) to 75 cm tall. Bunch grasses (*Hesperostipa comata*, *Achnatherum hymenoides*) and rhizomatous grasses (*Elymus lanceolatus lanceolatus*) are common but with little cover. Shrubs have many dead branches in the canopy.

Disturbance signs:

Unburned, undisturbed plot. There may be some effect from grazing.

Why was plot done?

Determine species composition and structure of sand vegetation and to serve as control to examine effects of fire.

Uncertainty on measurements:

Difficult to distinguish between *Stipa (Hesperostipa) comata* and *Oryzopsis (Achnatherum) hymenoides* because many plants had not bloomed.

Completeness of Species List:

Notes:

Location of plot does not fit any of the topographic position categories. Plot is about 40 m outside the boundary of the burn. Read UTM off map. Location on map estimated

Ground Cover

Soil	35.9	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	57	Wood	2.4	DRP*	0.7	Lichen	0	Moss	4.4

*DRP = Dead, Rooted

Plot 02SH06

Sampling Date 6/20/2002 **Cover Type:** BLM Dune

Location T 16 N, R 91 W, Section 1, NE 1/4

UTM 4585152 m N, 284242 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 6880 feet Aspect 340 Slope 5

Topo position: Toeslope Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:

08, C2 is a photo of the plot taken from the south-southwest corner.

Vegetation:

This is a shrubland dominated by *Chrysothamnus viscidiflorus* and containing *Purshia tridentata* and *Artemisia cana cana*. Common herbaceous species are *Elymus lanceolatus lanceolatus*, *Achnatherum hymenoides*, *Danthonia intermedia*, and *Alyssum desertorum*. Vegetation appears to be homogeneous in structure and composition. Estimated total canopy cover is 30%.

Disturbance signs:

Very hot fire in 1990.

Why was plot done?

Characterize composition and structure following 1990 fire.

Uncertainty on measurements:

Sticky white may or may not be all the same species.

Completeness of Species List:

Notes:

The aspect and slope are variable. Aspect is 40 and predominantly 340. Slope is predominantly 5.

Ground Cover

Soil	81	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	13.3	Wood	3.76	DRP*	10.2	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02SH07

Sampling Date 6/20/2002 **Cover Type:** BLM Dune

Location T 16 N, R 91 W, Section 1, SE 1/4

UTM 4584300 m N, 284102 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 6840 feet Aspect 325 Slope 2

Topo position: Footslope Soil texture: Loamy Sand

Soil features: one hand-texture surface 6"

Surface deposit: Aeolian

Description

Photos:

1, 1, 02: looking north down the long side of the macroplot, 6' staff. C. Cooper reading microplot.

Vegetation:

Vegetation consists of a low, open shrub layer above a herbaceous undergrowth. *Tetradymia canescens* appears to be dominant, with *Artemisia cana* and *Purshia tridentata* present. *Hesperostipa comata*, *Elymus lanceolatus lanceolatus*, and *Koeleria macrantha* are common (in that order).

Disturbance signs:

Why was plot done?

1990 burn. Placed in grassy area with some shrubs; type seems most common in burn.

Uncertainty on measurements:

Completeness of Species List:

Notes:

Plot includes backslope, footslope and toeslope. It is located on the side of a small swale in dunes.

Ground Cover

Soil	85	Gravel	0.4	Cobble	0	Boulder	0	Bedrock	0
Litter	12.6	Wood	1	DRP*	2	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02SH08

Sampling Date 6/21/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 29 , SE 1/4

UTM 4588385 m N, 288126 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7250 feet Aspect 335 Slope 13

Topo position: Backslope Soil texture: Loamy Sand

Soil features:

Surface deposit: Aeolian

Description

Photos:

09 C2 is a photo of the plot showing slope (north facing).

Vegetation:

This is a low, open shrubland of *Symphoricarpos oreophilus*, *Rosa* sp., *Chrysothamnus viscidiflorus*, *Purshia tridentata*, and *Ericameria nauseosa* (and other species) above a species-rich herbaceous stratum. Common species are *Poa secunda*, *Hesperostipa comata*, and *Heterotheca* sp. Shrub cover is patchy., due to topography. Estimated total canopy cover is 60%.

Disturbance signs:

Browsing; cattle, antelope and deer droppings.

Why was plot done?

Characterize post-burn vegetation, after 1993 fire.

Uncertainty on measurements:

Grass #1 and *Stipa* look very similar.

Completeness of Species List:

Notes:

Ground Cover

Soil	30	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	64.5	Wood	3.45	DRP*	1.85	Lichen	0	Moss	1.81

*DRP = Dead, Rooted

Plot 02SH09

Sampling Date 6/21/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 21 , NE 1/4

UTM 4590078 m N, 288498 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7531 feet Aspect 272 Slope 24

Topo position: Foothlope Soil texture: Sandy Loam

Soil features: Very sandy loam.

Surface deposit: Aeolian

Description

Photos:

camera 1: exposure 3 shows G. Jones with microplot, exposure 4 shows C. Cooper with pole. Film 1.

Vegetation:

Vegetation in the plot is a tall, fairly dense shrub stratum of *Artemisia tridentata* (*tridentata?*), *Purshia tridentata*, and other species, over a sparse but species-rich herbaceous layer. *Hesperostipa comata* is the most common herbaceous species. Estimated total canopy cover is 75%. Shrub cover in the overall area is high.

Disturbance signs:

This area did not burn in 1968.

Why was plot done?

Plot is outside western boundary of 1968 burn and serves as comparison for vegetation inside burned areas.

Uncertainty on measurements:

Stipa (*Hesperostipa*) *comata* estimates may contain *Oryzopsis* (*Achnatherum*) *hymenoides* (some plants have no inflorescences).

Completeness of Species List:

Notes:

Plot includes both foothslope and toeslope.

Ground Cover

Soil	29.4	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	67.6	Wood	4	DRP*	0.7	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02SH10

Sampling Date 6/22/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 21, SE 1/4

UTM 4589199 m N, 288790 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7700 feet Aspect 285 Slope 12

Topo position: Backslope Soil texture: Loamy Sand

Soil features: one hand texture surface 6"

Surface deposit: Aeolian

Description

Photos:

Cam 2, Roll1, #10: looking downslope at 6' pole. #11: S. Madden and C. Cooper reading macroplot.

Vegetation:

The vegetation consists of small shrubs (*Purshia tridentata*, *Artemisia tridentata* (ssp *tridentata*?), *Ericameria nauseosa*, *Chrysothamnus viscidiflorus*, and others) and a species-rich herbaceous stratum. *Hesperostipa comata* is the most common herbaceous species. Vegetative cover is fairly dense; total cover is estimated at ca. 30%.

Disturbance signs:

Old cattle droppings. Burned sagebrush stumps from 1968 fire. Charcoal largely gone.

Why was plot done?

To document composition and structure in area burned in 1968 fire.

Uncertainty on measurements:

Stipa could be a different grass.

Completeness of Species List:

Notes:

Ground Cover

Soil	60	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	39	Wood	1.5	DRP*	0.6	Lichen	0	Moss	0

*DRP = Dead, Rooted

Plot 02SH11

Sampling Date 6/21/2002 **Cover Type:** BLM Dune

Location T 17 N, R 90 W, Section 22 , NW 1/4

UTM 4589986 m N, 288900 m E (NAD 27 12N)

Map name: Sulphur Springs 1:24,00

Environment Elevation: 7780 feet Aspect 270 Slope 8

Topo position: Backslope Soil texture: Loamy Sand

Soil features: one hand texture surface 6"

Surface deposit: Aeolian

Description

Photos:

1, 1, 5: photo was taken looking upslope from the west end of the stand at the 6' pole near the center plot. 1, 1, 6: photo was taken looking downslope from the central plot to the west end of the macroplot. 1, 1, 7 and 8: C. Cooper reading a microplot.

Vegetation:

Open shrub layer of *Symphoricarpos oreophilus*, *Prunus virginiana*, and other species, and a herbaceous stratum of *Hesperostipa comata* and many other species.

Disturbance signs:

Burned shrub stumps from 1968 fire (charcoal mostly abraded away), old cattle droppings, small ants (not harvester) abound.

Why was plot done?

Characterize vegetation in burned area (1968) on recent sand, high on slope.

Uncertainty on measurements:

Stipa (*Hesperostipa*) *comata* could possibly be *Oryzopsis* (*Achnatherum*) *hymenoides*, and vice versa.

Completeness of Species List:

Notes:

GPS Rover file A062119A is nearby. Plot is on one of several distinct east-west dunes of loose sand. Between are hollows of more stable sand with *Artemisia tridentata*.

Ground Cover

Soil	43.1	Gravel	0	Cobble	0	Boulder	0	Bedrock	0
Litter	56.8	Wood	1.7	DRP*	0.8	Lichen	0	Moss	0

*DRP = Dead, Rooted