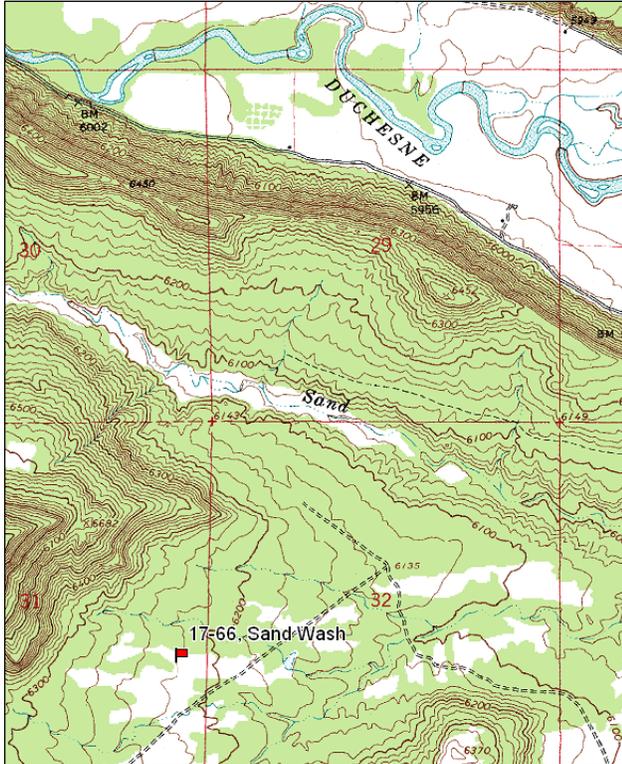


SAND WASH - TREND STUDY NO. 17-66-10

Vegetation Type: Wyoming Big Sagebrush  
Range Type: Crucial Deer Winter, Crucial Elk Winter  
NRCS Ecological Site Description: Not Available  
Land Ownership: UDWR  
Elevation: 6230 ft. (1899 m)  
Aspect: Northeast  
Slope: 4%  
Transect bearing: 85° magnetic  
Belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

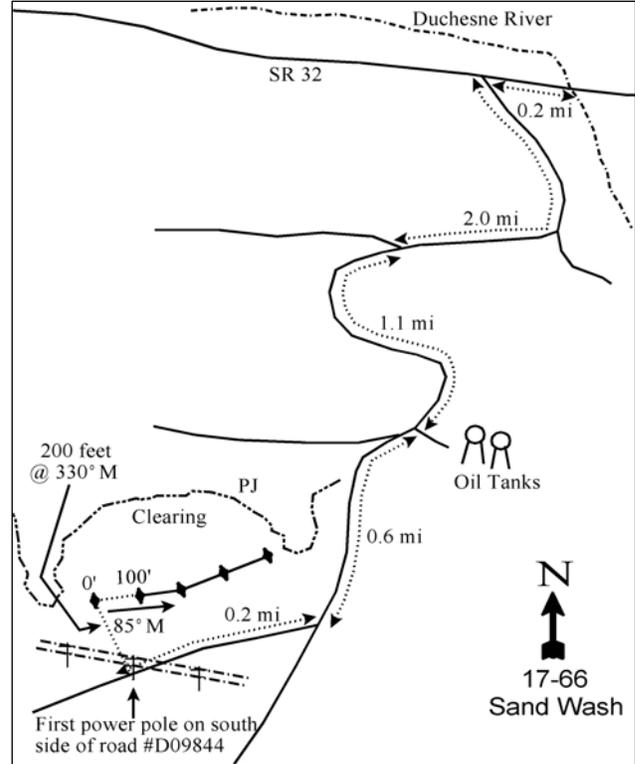
Directions:  
 From State Route 87, turn onto State Route 32 and go west toward the Duchesne River. Turn left onto a road heading south 0.2 miles after crossing the Duchesne River. Travel 2.0 miles to a fork in the road and stay to the left. Continue another 1.1 miles to a fork that goes to some oil tanks. Drive straight for 0.6 miles to another fork. Go to the right and drive 0.2 miles to the first power pole on the south side of the road, #D09844. From here walk 200 feet at 330°M to the 0-foot stake.

Map Name: Talmage



Township: 2S Range: 5W Section: 31

Diagrammatic Sketch:



GPS: NAD 83, UTM 12T 543761 E 4456848 N

## SAND WASH - TREND STUDY NO. 17-66

### Site Information

Site Description: The study is located within a Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osteosperma*) community. The study is on land owned and managed by the Utah Division of Wildlife Resources (UDWR) as part of the Rabbit Gulch Wildlife Management Area (WMA). Grazing has not been permitted on the WMA for many years. Pellet group transect data has estimated light to moderate use by deer and elk, and very light use by cattle since 2005 (Table - Pellet Group Data).

Browse: Browse species are not abundant, but the key browse species is Wyoming big sagebrush which provides the only notable cover of preferred browse (Table - Canopy Cover). Wyoming big sagebrush consists of a small population of mature plants with high decadence and poor vigor. Utilization of sagebrush has been light to moderate with a few plants displaying heavy use. There was no new recruitment of young sagebrush plants in 2005, but recruitment was good in 2010. Other shrubs include small populations of winter fat (*Ceratoides lanata*), broom snakeweed (*Gutierrezia sarothrae*) and yucca (*Yucca sp.*) (Table - Browse Characteristics). Pinyon and juniper are very abundant surrounding the site, but are found in fairly low density on the study site (Table - Point-Quarter Data).

Herbaceous Understory: Perennial grasses are diverse and abundant, but are dominated by just a few species. Needle-and-thread (*Stipa comata*) provides the majority of the vegetation cover on the site, but galleta (*Hilaria jamesii*) is also very common. Other perennial grasses include blue grama (*Bouteloua gracilis*), Indian ricegrass (*Oryzopsis hymenoides*) and Salina wildrye (*Elymus salina*). Forbs are very limited on the site and are comprised of a mixture of annual and perennial species (Table - Herbaceous Trends)

Soil: The soil has a sandy loam texture with a slightly alkaline soil reaction (pH 7.7). Bare ground cover is high with vegetation and litter cover provided almost exclusively by the few perennial grass species (Table - Basic Cover). The soil erosion condition was classified as stable in 2005 and 2010.

### Trend Assessments

#### Browse:

- **2005 to 2010 - up (+2):** The density of Wyoming big sagebrush increased by 38% from 1,120 plants/acre to 1,540 plants/acre with an increase in the recruitment of young plants from 0% to 17% of the population. Decadence of sagebrush decreased from 77%, but remained high at 45%. Poor vigor of sagebrush remained high at 47%.

#### Grass:

- **2005 to 2010 - stable (0):** There was a slight decrease in the sum of nested frequency of perennial grasses, but cover increased from 17% to 27%. There was a significant decrease in the nested frequency of needle-and-thread and Salina wildrye.

#### Forb:

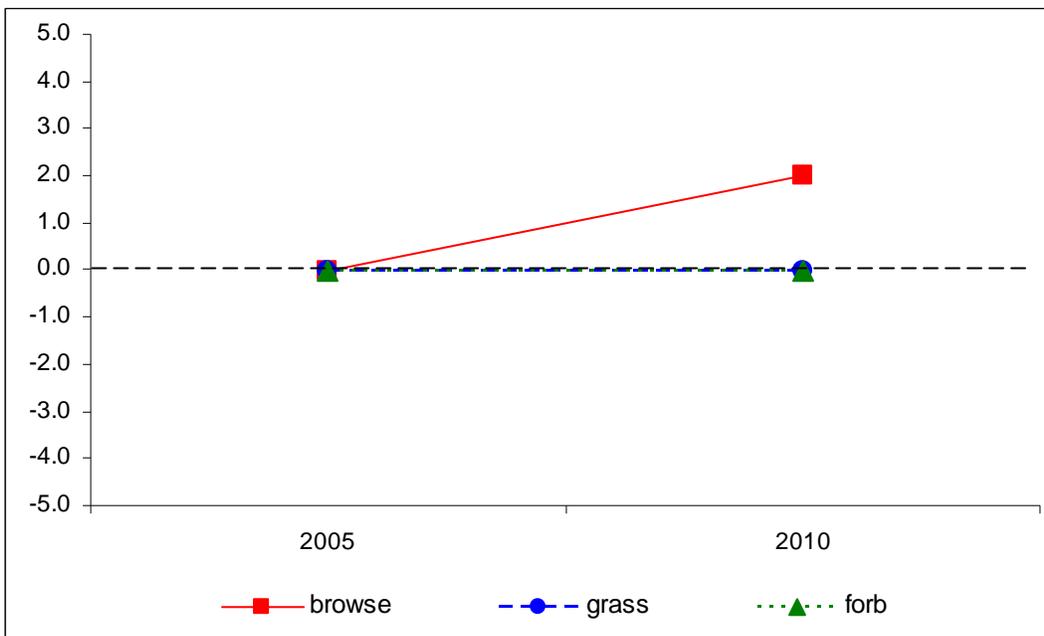
- **2005 to 2010 - stable (0):** Perennial forbs are very rare on the site and cover was less than 1%.

DEER DESIRABLE COMPONENTS INDEX - LOW POTENTIAL SCALE --  
 Management unit 17, study no: 66

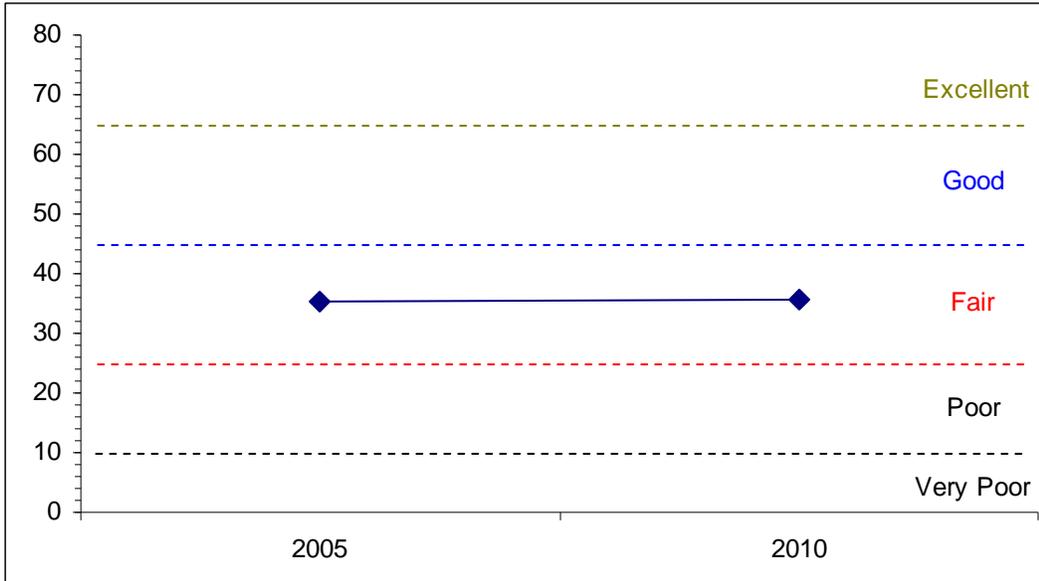
Year	Preferred Browse Cover	Preferred Browse Decadence	Preferred Browse Young	Perennial Grass Cover	Annual Grass Cover	Perennial Forb Cover	Noxious Weeds	Total Score	Ranking
05	4.4	0.0	0.0	30.0	0.0	1.1	0.0	35.5	Fair
10	4.9	0.0	0.0	30.0	0.0	0.9	0.0	35.7	Fair

**Trend Summary**

CUMULATIVE RANGE TREND ASSESSMENT--  
 Management unit 17, Study no: 66



DEER DESIRABLE COMPONENTS INDEX TREND, LOW POTENTIAL SCALE--  
 Management unit 17, Study no: 66



HERBACEOUS TRENDS--  
 Management unit 17, Study no: 66

Type	Species	Nested Frequency		Average Cover %	
		'05	'10	'05	'10
G	<i>Bouteloua gracilis</i>	8	26	.11	.67
G	<i>Elymus salina</i>	<sub>b</sub> 71	<sub>a</sub> 23	.67	.71
G	<i>Hilaria jamesii</i>	134	154	3.61	5.25
G	<i>Oryzopsis hymenoides</i>	4	4	.03	.18
G	<i>Sitanion hystrix</i>	1	8	.00	.07
G	<i>Stipa comata</i>	<sub>b</sub> 319	<sub>a</sub> 283	12.82	19.95
G	<i>Vulpia octoflora</i> (a)	3	2	.01	.03
Total for Annual Grasses		3	2	0.00	0.03
Total for Perennial Grasses		537	498	17.27	26.85
Total for Grasses		540	500	17.28	26.88
F	<i>Allium</i> sp.	-	4	-	.01
F	<i>Chaenactis douglasii</i>	-	2	-	.01
F	<i>Chenopodium album</i> (a)	7	7	.01	.02
F	<i>Chenopodium leptophyllum</i> (a)	2	3	.00	.01
F	<i>Collinsia parviflora</i> (a)	3	1	.01	.00
F	<i>Cryptantha</i> sp.	1	2	.00	.07
F	<i>Descurainia pinnata</i> (a)	<sub>b</sub> 10	<sub>a</sub> 1	.03	.03
F	<i>Eriogonum cernuum</i> (a)	<sub>b</sub> 57	<sub>a</sub> 16	.21	.04
F	<i>Eriogonum</i> sp.	-	1	-	.00
F	<i>Haplopappus acaulis</i>	<sub>b</sub> 14	<sub>a</sub> -	.31	-
F	<i>Hymenoxys acaulis</i>	<sub>b</sub> 11	<sub>a</sub> -	.06	-
F	<i>Lappula occidentalis</i> (a)	17	15	.50	.27
F	<i>Navarretia intertexta</i> (a)	11	30	.05	.11
F	<i>Phlox austromontana</i>	2	2	.03	.03

Type	Species	Nested Frequency		Average Cover %	
		'05	'10	'05	'10
F	<i>Sphaeralcea coccinea</i>	11	15	.13	.22
F	<i>Townsendia incana</i>	8	5	.02	.04
F	<i>Tragopogon dubius</i>	-	5	-	.03
Total for Annual Forbs		107	73	0.82	0.50
Total for Perennial Forbs		47	36	0.56	0.44
Total for Forbs		154	109	1.38	0.94

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

#### BROWSE TRENDS--

Management unit 17, Study no: 66

Type	Species	Strip Frequency		Average Cover %	
		'05	'10	'05	'10
B	<i>Artemisia tridentata wyomingensis</i>	39	53	3.38	3.90
B	<i>Ceratoides lanata</i>	2	1	.15	-
B	<i>Gutierrezia sarothrae</i>	0	3	-	-
B	<i>Juniperus osteosperma</i>	4	5	1.83	2.50
B	<i>Leptodactylon pungens</i>	1	1	.00	.00
B	<i>Opuntia sp.</i>	13	17	.15	.09
B	<i>Sclerocactus sp.</i>	1	1	.03	-
B	<i>Yucca sp.</i>	1	2	.15	-
Total for Browse		61	83	5.72	6.51

#### CANOPY COVER, LINE INTERCEPT--

Management unit 17, Study no: 66

Species	Percent Cover	
	'05	'10
<i>Artemisia tridentata wyomingensis</i>	4.80	5.80
<i>Gutierrezia sarothrae</i>	-	.11
<i>Juniperus osteosperma</i>	4.46	3.91
<i>Opuntia sp.</i>	.21	.41
<i>Yucca sp.</i>	-	.08

#### KEY BROWSE ANNUAL LEADER GROWTH--

Management unit 17, Study no: 66

Species	Average leader growth (in)	
	'05	'10
<i>Artemisia tridentata wyomingensis</i>	2.1	1.4

POINT-QUARTER TREE DATA--  
Management unit 17, Study no: 66

Species	Trees per Acre	
	'05	'10
Juniperus osteosperma	45	46
Pinus edulis	21	24

Average diameter (in)	
'05	'10
7.0	5.8
1.9	1.6

BASIC COVER--  
Management unit 17, Study no: 66

Cover Type	Average Cover %	
	'05	'10
Vegetation	25.61	37.04
Rock	.06	0
Pavement	.16	.07
Litter	27.84	38.26
Cryptogams	2.95	2.10
Bare Ground	51.04	45.13

SOIL ANALYSIS DATA --  
Management unit 17, Study no: 66, Study Name: Sand Wash

Effective rooting depth (in)	pH	sandy loam			%OM	PPM P	PPM K	ds/m
		%sand	%silt	%clay				
12.8	7.7	64.7	17.1	18.2	0.6	6.4	64.0	0.5

PELLET GROUP DATA--  
Management unit 17, Study no: 66

Type	Quadrat Frequency		Days use per acre (ha)	
	'05	'10	'05	'10
Rabbit	50	40	-	-
Elk	26	29	19 (48)	34 (84)
Deer	19	29	21 (51)	45 (101)
Cattle	1	4	-	3 (7)

BROWSE CHARACTERISTICS--  
Management unit 17, Study no: 66

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 tridentata wyomingensis</i>									
05	<b>1120</b>	0	23	77	-	43	20	48	16/28
10	<b>1540</b>	17	38	45	40	39	10	47	16/26
<i>Ceratoides lanata</i>									
05	<b>40</b>	0	100	-	-	0	50	0	9/13
10	<b>20</b>	0	100	-	-	0	100	0	6/7
<i>Grayia spinosa</i>									
05	<b>0</b>	0	0	-	-	0	0	0	23/30
10	<b>0</b>	0	0	-	-	0	0	0	22/28
<i>Gutierrezia sarothrae</i>									
05	<b>0</b>	0	0	-	-	0	0	0	-/-
10	<b>100</b>	20	80	-	-	0	0	0	8/11
<i>Juniperus osteosperma</i>									
05	<b>100</b>	20	80	-	-	0	0	0	-/-
10	<b>100</b>	40	60	-	-	0	0	0	-/-
<i>Leptodactylon pungens</i>									
05	<b>20</b>	0	0	100	-	100	0	100	-/-
10	<b>20</b>	0	100	0	20	0	0	0	3/5
<i>Opuntia sp.</i>									
05	<b>400</b>	5	95	-	-	0	0	0	4/14
10	<b>380</b>	0	100	-	-	0	0	0	5/15
<i>Sclerocactus sp.</i>									
05	<b>60</b>	100	0	-	-	0	0	0	-/-
10	<b>20</b>	0	100	-	-	0	0	0	1/2
<i>Yucca sp.</i>									
05	<b>80</b>	100	0	-	-	0	0	0	10/15
10	<b>100</b>	60	40	-	-	0	0	0	9/22