

## Standards of Public Land Health

### Evaluation of 64084 THUNDERHEAD RANCH Allotment [ 04/21/2007 ]

The Roswell Field Office conducted (RHA) Rangeland Health Assessments at 7 study sites within Thunderhead Ranch, allotment #64084. These assessments evaluated Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of these field assessments. A summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
64084-EAST-F260	X			X			N/A		
64084-HOUSE-F263	X			X			N/A		
64084-NORTHEAST-F258	X			X			N/A		
64084-NORTHWEST-F259	X			X			N/A		
64084-SOUTH-F262	X	*		X	*		N/A		
64084-SOUTHEAST-F257	X			X			N/A		
64084-WEST-F261	X			X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on Thunderhead Ranch, allotment #64084. Ten of these assessed soil site stability; 11 hydrologic function; and 13 biotic integrity. These qualitative assessments in conjunction with quantitative information gathered from previous data collected on 7 trend plot locations within this allotment were utilized to make rangeland health determinations. Quantitative evaluations are performed by the Roswell Field Office, which include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition. These collections, which were initiated in the late 1970's/early 1980's, are scheduled and conducted approximately every 5 years.

There are seven study sites on this allotment. All were visited on April 20 and 21, 2007. Two sites are Loamy SD-3; two are Shallow SD-3; two are Very Shallow CP-4; and one is a Loamy CP-2. According to GIS, the allotment contains 11 main pastures with study sites in seven of the pastures. These sites are intended to serve as key areas for the pastures and provide an indication of rangeland health for the pastures and for the allotment.

The allotment is used by cattle. Grazing use was noted in five of the pastures visited. Three of those pastures had heavy use on key forage grasses such as black and blue grama.

Soil is relatively stable at most sites. Most sites had little evidence of soil movement or loss. The site in South Pasture had several "moderate" departures. The site in West Pasture had one "moderate" departure. (More on this later).

Hydrologic function was similar to soil stability. At most sites, herbaceous ground cover exceeded expected amounts or was near expected amounts. For many areas, there was also a substantial increase in snakeweed and in some areas, there was a substantial increase in catclaw acacia. There are large areas on the allotment, mostly areas with a little slope that appear to be dominated by snakeweed. These areas are not captured by the study sites.

At all study sites, biotic integrity remains relatively intact. Most areas showed some shift in species composition. Loamy areas were typically heavily dominated by tobosa grass with a substantial reduction in black grama. Shallow and very shallow sites usually had a lot more snakeweed than expected. Some areas not captured by the study sites were dominated by snakeweed. Annual production was generally good at all study sites. Areas with heavier snakeweed concentrations could be expected to have substantially less production. Invasive plants rated "slight to moderate" at each study site. For most sites, this was due to an increase in increaser plants such as cholla, mesquite, catclaw acacia and snakeweed. The site in South pasture had invasive plants that consisted of salt cedar and thistle (possibly musk thistle). Mesquite was gaining a foothold in two areas; South and West pasture.

Habitat for pronghorn and mule deer was satisfactory throughout this allotment.

The following discussion is a site by site evaluation.

Site #64084-EAST-F260 was visited on April 21, 2007. East pasture contains approximately 1460 acres. The majority of this pasture is BLM land. A small portion is private. The study site is within a loamy SD-3 ecosite. According to GIS, other ecosites within the pasture include: CP-2 sandy, loamy, and swale. The pasture contains nearly flat to gently sloping, undulating terrain ranging in elevation from 4230 feet to 4330 feet. Roads in the area are creating localized erosion problems. Cattle were in the pasture at the time of the visit. Grazing use was light.

All soil stability indicators rated "slight to moderate" or "none to slight". Soil was relatively stable. There were patches and strips along travel ways that were less stable. Generally, rills rated "none to slight", but cow trails through the area were forming rills. Gullies were forming in association with roads and travel ways. Resistance to erosion was slightly reduced throughout the area. There has been some soil loss as indicated by plant pedestals.

Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected.

All biotic indicators rated "slight to moderate" or "none to slight". F/S Groups rated "slight to moderate". Tobosa grass is by far the dominant grass. Black grama was only a trace in the composition. Blue grama and Hall's panic were common in the composition. Snakeweed was much higher than expected in the ESD. Production was estimated to be greater than 80% of potential for the ecosite. This is due to the dense stand of tobosa grass. Most loamy areas in this pasture are heavily dominated by tobosa grass. Invasive plants rated "slight to moderate" due to cholla be widely scattered throughout the area and due to the increase in snakeweed over expected amounts. Areas with a little slope and out of loamy areas are sometimes dominated by snakeweed.

The site and pasture provide satisfactory habitat for pronghorn and mule deer.

Site #64084-HOUSE-F263 was visited on April 21, 2007. House pasture contains approximately 2401 acres. The pasture is entirely BLM land. The study site is located near the south boundary fence and is within a shallow SD-3 ecosite. According to GIS, other ecosites within the pasture include: very shallow CP-4, CP-2 shallow sand, shallow plains, and loamy. The pasture contains gently sloping, undulating terrain ranging in elevation from about 4100 feet to 4300 feet. Cattle were in the area at the time of the visit. Current use was light, but past use (prior to this growing season) was heavy.

All soil stability indicators rated "slight to moderate" or "none to slight". Soil was relatively stable. There has been some soil loss as indicated by plant pedestals. Bare ground was less than expected for the site. There were no rills. There was one gully nearby that was stabilizing. Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected, but there is an increase in snakeweed and there are patchy bare areas that are having a minor effect on runoff and infiltration.

All biotic indicators rated "slight to moderate" or "none to slight". The number of species in F/S Groups is slightly reduced. Black grama is dominant, but burrograss is increasing in composition. There is more snakeweed than expected. Annual production was good. Litter amount was good. Invasive plants rated "slight to moderate" due to cholla being widely scattered throughout this area and due to an increase in snakeweed over expected amounts. This site and pasture provide satisfactory habitat for pronghorn and mule deer. Site #64084-NORTHEAST-F258 was visited on April 21, 2007. Northeast pasture contains approximately 876 acres. Most of this pasture is state land. About .3 of the pasture is BLM land. The study site is located on state land and is within a very shallow CP-4 ecosite. According to GIS, other ecosites within this pasture include: Shallow sand CP-2 and loamy CP-2. This pasture contains gently sloping, undulating terrain ranging in elevation from about 4160 feet to 4300 feet. At the time of the visit, there had been light use, mostly on black grama.

All soil stability indicators rated "slight to moderate" or "none to slight". Soil was stable with very little evidence of soil loss. There were no rills or gullies. Bare ground was less than expected for the site. The site had a lot of surface rock. Soil resistance to erosion was good.

Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected.

All biotic indicators rated "slight to moderate" or "none to slight". The number of species in F/S Groups is slightly reduced. Black grama is the dominant grass. There is substantially more snakeweed than expected. Annual production was relatively good (60-80% of potential). Litter amount was good. Invasive plants rated "slight to moderate" due to cholla be widely scattered throughout the area and due to the increase in snakeweed over expected amounts.

The site and pasture provide satisfactory habitat for pronghorn and mule deer.

Site #NORTHWEST-F259 was visited on April 21, 2007. Northwest pasture contains approximately 438 acres and is entirely BLM land. The study site is located within a very shallow CP-4 ecosite. According to GIS, other ecosites within this pasture include: CP-2 shallow sand and Loamy. The pasture contains gently sloping, undulating terrain ranging in elevation from about 4160 feet to 4260 feet. At the time of the visit, no grazing use was apparent. All soil stability indicators rated "slight to moderate" or "none to slight". Soil was relatively stable with very little evidence of soil loss. There were no rills or gullies within the study site, but there was a gully associated with a stock tank west of this point. Bare ground was less than expected for the site. The site had a lot of surface rock. Soil resistance to erosion was good. There has been some soil loss as indicated by plant pedestals. Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected, but plant community and distribution relative to infiltration and runoff rated "slight to moderate" due to an increase in catclaw acacia and reduced cover in scattered patches. All biotic indicators rated "slight to moderate" or "none to slight". The number of species in F/S Groups is slightly reduced, but grasses are reasonably diverse. Black grama is the dominant grass. There is an increase in catclaw acacia and snakeweed. Annual production was relatively good (60-80% of potential). Litter amount was good. Invasive plants rated "slight to moderate" due to an increase in increasers like catclaw and snakeweed over expected amounts. The site and pasture provide satisfactory habitat for pronghorn and mule deer. Site #64084-SOUTH-F262 was visited on April 21, 2007. South pasture, which is in the north part of the allotment, contains approximately 1226 acres and is entirely BLM land. The study site is located within a loamy CP-2 ecosite. According to GIS, other ecosites within this pasture include: very shallow CP-4 and shallow sand CP-2. The pasture contains gently sloping, undulating terrain ranging in elevation from about 4060 feet to 4200 feet. Study plot is in an area with bottomland characteristics. This loamy site follows along a drainage that heads near State Hwy 48 about 4 miles to the south. The drainage has been subject to heavy flooding. Most of the area in this vicinity is within a very shallow CP-4 ecosite. Cattle were in the pasture. Grazing use was heavy on desirable grasses. The study plot is very near the above mentioned drainage. There is a pipeline and road nearby to the north that is eroding.

This site had several soil stability indicators that rated "moderate". Some rills were developing in association with cow trails and along the toe slopes in several areas. Gullies have formed in association with a nearby road and pipeline. The main drainage has active cutting. A side drainage has formed a large head cut. Water flow patterns in the bottom areas near the study plot were mostly short and stable, but away from the bottom areas, flow patterns were more evident with minor erosion. Pedestals and small terracettes have formed. Some are active. Litter is being displaced throughout the area, but large concentrations of litter have accumulated in the main

drainage. Soil resistance to erosion has been reduced throughout the area. Soil loss is evident throughout much of the area as indicated by plant pedestals.

Hydrologic function was rated similarly. Herbaceous ground cover was much greater than expected in the bottom areas and near expected away from the bottom areas. Plant community and distribution relative to infiltration and runoff rated "slight to moderate" due to reduced cover in scattered patches.

Biotic integrity indicator ratings varied. Soil surface resistance to erosion and loss and degradation rated "moderate" and have already been discussed. F/S Groups rated "slight to moderate". The number of species in F/S Groups is slightly reduced. Tobosa grass dominates the bottom areas and is less dominant away from bottom areas. Black grama is greatly reduced from expected amounts. Litter amount was near expected. Annual production was estimated to be 60-80% of potential. Invasive plants rated "slight to moderate". Relatively young salt cedar has established along main drainage. It is limited to this narrow corridor. An unknown thistle (possibly musk thistle) is scattered throughout these bottom areas. Cholla and mesquite are widely scattered throughout.

This site and pasture provide satisfactory habitat for pronghorn and mule deer.

Site #64084-SOUTHEAST-F257 was visited on April 21, 2007. Southeast pasture, which is in the northwest corner of the allotment, contains approximately 680 acres and is a mix of state and BLM land. This study site is located on state land within a shallow SD-3 ecosite. According to GIS, other ecosites within this pasture include: very shallow CP-4, CP-2 shallow sand, loamy, and sandy plains. This pasture contains gently sloping, undulating terrain ranging in elevation from about 4,130 feet to 4,260 feet. At evaluation, no grazing use was apparent.

All soil stability indicators rated "slight to moderate" or "none to slight". Soil was relatively stable with little evidence of soil loss. There were no rills or gullies within the study site. Bare ground was less than expected for this site. Water flow patterns were short and stable. Plant pedestals were evident, but none appeared active. Soil resistance to erosion was somewhat reduced. There has been some soil loss as indicated by plant pedestals.

Hydrologic function was rated similarly. Herbaceous ground cover was greater than expected, but plant community and distribution relative to infiltration and runoff rated "slight to moderate" due to an increase in snakeweed and reduced cover in scattered patches.

All biotic indicators rated "slight to moderate" or "none to slight". The number of species in F/S Groups is slightly reduced, but grasses are reasonably diverse. Black grama is the dominant grass. There is an increase in snakeweed. Annual production was good. Litter amount was good. Invasive plants rated "slight to moderate". There were no true "invasive plants", but snakeweed (an increaser) was much higher than expected. The site and pasture provide satisfactory habitat for pronghorn and mule deer.

Site #64084-WEST-F261 was visited on April 20, 2007. West pasture contains approximately 1,417 acres and is mostly private land with about 29% BLM. The study site is located near a

county road on BLM land and is within a loamy SD-3 ecosite. According to GIS, other ecosites within this pasture include: shallow sand and loamy CP-2, and Very Shallow CP-4. The pasture contains nearly flat to gently sloping, undulating terrain ranging in elevation from about 4200 feet to 4300 feet. The county road is contributing to erosion where water is diverted off the road. Black and blue grama had been heavily grazed.

Most soil stability indicators rated "slight to moderate" or "none to slight". Soil was relatively stable but there was evidence of loss. The adjacent county road was contributing to accelerated erosion where water was being diverted off the road. Flow patterns were very evident in these areas. Pedestaling rated "moderate". Pedestals and mini terracettes had formed and were active. Rills were also forming in these runoff areas. An old two-track road has turned into a gully with active cutting where water from the road finally reaches this low spot in the terrain. Above this road, conditions are more stable with less evidence of water flow patterns and pedestaling. Generally, bare ground was somewhat less than expected for this site. Soil resistance to erosion was somewhat reduced throughout this area but particularly in flow patterns below the road. There has been some soil loss as indicated by plant pedestals.

Hydrologic function showed a slightly greater departure. Herbaceous ground cover was generally greater than expected, but plant community and distribution relative to infiltration and runoff rated "moderate" due to an increase in snakeweed and reduced cover in scattered patches. Away from the study site, there are relatively large areas that have abundant snakeweed that are being affected. These areas are usually areas with a little slope and may be within very shallow CP-4 ecosites. Litter amount rated "moderate". It was near or slightly below an expected amount of 25-30%. This would be consistent with heavy grazing use.

Most biotic indicators rated "slight to moderate" or "none to slight". F/S Groups rated "slight to moderate" but is trending toward "moderate". Tobosa grass is the dominant grass. Black and blue grama are well represented in composition. There are large patches across this landscape that are dominated by snakeweed. These patches are usually areas with a little more slope and may be on a very shallow CP-4. Annual production was relatively good (60-80% of potential). Litter amount rated "moderate". Invasive plants rated "slight to moderate" due to mesquite and cholla being widely scattered throughout. There is a substantial increase in snakeweed (an increaser) that could push this to "moderate".

The site and pasture provide satisfactory habitat for pronghorn and mule deer. It is the professional opinion of Assessment Team, public land within Thunderhead Ranch, allotment #64084 meets Upland and Biotic standards, There are no Riparian issues present therefore this standard was not addressed. See site notes and recommendations for further information regarding this allotment.

**Recommendations:** Several pastures showed heavy use on desirable forage grasses. Some areas showed a substantial reduction in expected grasses such as black grama. Most areas showed an increase in snakeweed. Consider alternating or changing the timing and duration of grazing to allow desirable forage plants to re-establish and reproduce. Use key forage plants to establish appropriate grazing use levels. Consider prescribed fire on areas with overly dense stands of tobosa grass.

Gullies on the allotment are generally rare. When they occur, they are associated with roads or other constructed features. All the roads within this allotment should be evaluated for this condition and corrective measures taken.

Invasive plants were found in a few places on this allotment i.e. South Pasture. Recommend a thorough inventory with follow-up treatments to prevent further infestation.

## RFOs Upland and Biotic Standard Assessment Summary Worksheet

### SITE 64084-EAST-F260

Legal Land Desc	SWNE 21 0090S 0220E Meridian 23	Acreage	1174
Ecosite	042CY007NM LOAMY SD-3	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON/REBITZKI	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 SIL	Soil Phase	CONGER- REAGAN
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation	20.71	Observed Avg Growing Season Precipitation	15.33
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle were in the pasture. Grazing use was light at the time of the visit.		

### Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	Generally none, but cow trails are forming rills.					
S H	Water Flow Patterns				X	
Comments:	Mostly short and stable, but some are more pronounced.					
S H	Pedestals and/or Terracettes				X	
Comments:	There is some pedestalling especially in flow patterns. Some are active.					
S H	Bare Ground					X
Comments:	Much less than expected for the site. Estimated to be around 20%. Much of the area					

	has thick tobosa grass.					
S H	Gullies				X	
Comments:	Generally none, but there are gullies forming in association with road and pipeline.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	some displacement, but otherwise uniform distribution.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Moderate soil aggregate stability. Less resistant in open areas.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Minimal soil loss under heavy tobosa cover. There is some soil loss in open areas as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Herbaceous ground cover greater than expected.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	There is a shift in the grass composition from expected. Tobosa grass is by far the dominant grass. Black grama is trace in the composition. Blue grama is still represented. Halls Panic is relatively high in the composition. Snakeweed is higher than expected					
B	Plant Mortality/Decadence					X
Comments:	Tobosa grass is beginning to show some decadence.					
H B	Litter Amount					X
Comments:	Exceeds expected.					
B	Annual Production					X
Comments:	Tobosa grass stands are thick. Annual production is estimated to be >80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are widely scattered throughout. Snakeweed has increased.					
B	Reproductive Capability of Perennial Plants					X
Comments:	All forage plants produced seed in 2006.					

S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn antelope.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

### Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	6	4
H	Hydrologic	0	0	0	6	5
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with little evidence of soil movement or loss. Ground cover is good.	0	0	10
Hydrologic		0	0	11
Biotic	Biotic integrity indicators rate "none to slight" or "slight to moderate". Grass composition has shifted to a tobosa grass grassland. Black grama is minimal in	0	0	13

	the composition. Snakeweed is higher than expected.			
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Site Notes: Soil is basically stable with only minor evidence of soil movement or loss. There are bare patches where there has been some soil loss, particularly strips along the roads or pipelines.

Driving to the site, all loamy areas are heavily dominated by tobosa grass. Slope areas have high concentrations of snakeweed and catclaw. There are large areas that have little ground cover and are dominated by snakeweed. Roads are a problem throughout. Plants encountered included:

shrubs: cholla, snakeweed, prickly pear, yucca forbs: verbena, fendler bladder pod, ERIOG  
grasses: BOER, BOGR, PAHA, SCBR, HIMU, MUAR

**RFOs Upland and Biotic Standard Assessment Summary Worksheet****SITE 64084-HOUSE-F263**

Legal Land Desc	SESE 12 0090S 0210E Meridian 23	Acreage	3643
Ecosite	042CY025NM SHALLOW SD-3	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	

Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 L	Soil Phase	CONGER-REAGAN
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Site is near the south pasture fence. Tanks are nearby. Cattle are in the area, but there was no current use observed. Last season's use was heavy.		

## Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	Short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	some pedestalling, mostly in flow patterns					
S H	Bare Ground					X
Comments:	less than expected for the site.					
S H	Gullies					X
Comments:	Generally none, but there is one nearby that is healing.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:						
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Aggregate stability is high, but there is some reduction in plant interspaces.					
S H B	Soil Surface Loss or Degradation				X	

Comments:	Some soil loss has occurred as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Herbaceous ground cover is greater than expected, but there is an increase in snakeweed and patchy bare areas that are having a minor effect on runoff and infiltration.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Number of species in F/S groups is slightly reduced. Black grama is the dominant grass. Blue grama is high in the composition. Burrograss is gaining in the composition. Snakeweed is higher than expected.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Greater than the expected 5-8%.					
B	Annual Production					X
Comments:	>80% of potential.					
B	Invasive Plants				X	
Comments:	Cholla are very widely scattered. Snakeweed (an increaser) has increased.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:						
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					
<b>Part 3. Summary</b>						

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with only minimal signs of soil movement or loss. Pedestalling was generally confined to water flow patterns.	0	0	10
Hydrologic		0	0	11
Biotic	There is good ground cover, good litter cover, and good production. Black grama is the dominant grass as expected, but snakeweed is increasing. Burrograss appears to be increasing.	0	0	13

Site Notes: Study plot is near the south pasture fence. Soil is relatively stable with few signs of soil movement or loss. There is some pedestalling, mostly within water flow patterns. Black grama is the dominant grass. There is a substantial increase in snakeweed. Last year's (or this past winter's) grazing use was heavy.

Plant species encountered included:

shrubs: GUSA, cholla, ACGR forbs: verbena, Hymenoxys spp., PLPA, SPHAER, SOLAN, Astragalus mollisimus grasses: BOER, BOGR2, HIMU, SCBR, ARIST

**RFOs Upland and Biotic Standard Assessment Summary Worksheet**

**SITE 64084-NORTHEAST-F258**

Legal Land Desc	SWNE 16 0090S 0220E Meridian 23	Acreage	988
Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y

Watershed	13060005070 SALT		
Observers	BRITTON/REBITZKI	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	ECC	Soil Taxon Name	ECTOR
Texture Class	NM644 CBV-L	Soil Phase	ECTOR- CONGER
Texture Modifier	NM644 VERY COBBLY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Light grazing use on black grama at this time. Slight to no use on other grasses.		

## Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	no rills					
S H	Water Flow Patterns				X	
Comments:	short and stable					
S H	Pedestals and/or Terracettes					X
Comments:	Very few pedestals.					
S H	Bare Ground					X
Comments:	Less than expected. Lots of surface rock.					
S H	Gullies					X
Comments:	None observed.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Some displacement, but otherwise uniform distribution.					

S H B	Soil Surface Resistance to Erosion					X
Comments:	Moderate soil aggregate stability, but the site is very stable, particularly with all the surface rock.					
S H B	Soil Surface Loss or Degradation					X
Comments:	Little evidence of soil loss or degradation.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Herbaceous ground cover is greater than expected.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Number of species in F/S Groups is slightly reduced. Snakeweed is much higher than expected.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Greater than expected.					
B	Annual Production				X	
Comments:	Estimated to be 60-80% of potential.					
B	Invasive Plants				X	
Comments:	Very widely scattered cholla					
B	Reproductive Capability of Perennial Plants					X
Comments:	Desirable forage plants produced seed.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X

Comments: N/A

**Part 3. Summary**

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	2	8
H	Hydrologic	0	0	0	2	9
B	Biotic	0	0	0	4	9

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are very stable with very little evidence of soil movement or loss.	0	0	10
Hydrologic		0	0	11
Biotic	Diversity of grasses is relatively good. Black grama is the dominant grass. Production is good. Litter amount is good. Snakeweed is substantially higher than expected.	0	0	13

Site Notes: Road access to this site no longer exists. The study plot is near the top of the ridge.

Site is very stable with very little evidence of soil movement or loss. Site is very rocky. There is more tobosa grass here than expected, but generally, species diversity is good. Snakeweed is substantially higher than expected. The area has been lightly grazed.

Plant species encountered included: shrubs: GUSA, ACGR, OPUNT (cholla and prickly pear) forbs: verbena, fender bladderpod, ERBO (filaree) grasses: BOER, HIMU, BOGR2, SPCR, TRPI, ARIST, PAOB, PAHA, SCBR

<b>RFOs Upland and Biotic Standard Assessment Summary Worksheet</b>			
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<b>SITE 64084-NORTHWEST-F259</b>			
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Legal Land Desc	SENW 17 0090S 0220E Meridian 23	Acreage	671
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Ecosite	070DY158NM VERY SHALLOW CP-4	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON/ DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	ECC	Soil Taxon Name	ECTOR
Texture Class	NM644 CBV-L	Soil Phase	ECTOR-CONGER
Texture Modifier	NM644 VERY COBBLY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	A two track road passes through the site. No recent livestock use was apparent.		

## Part 2. Attributes and Indicators

Attribute	Indicators	Departure from Ecological Site Description/Ecological Reference Areas				
		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	No rills.					
S H	Water Flow Patterns				X	
Comments:	short and stable.					
S H	Pedestals and/or Terracettes				X	
Comments:	Some evidence of past formation of pedestals. Not very active.					
S H	Bare Ground					X
Comments:	Less than the expected 43%. Lots of surface cobble.					
S H	Gullies					X
Comments:	None					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X

Comments:						
H	Litter Movement					X
Comments:	Little to no displacement.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Aggregates stable on surface in most cases.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Some past loss is apparent.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Increase in catclaw and decrease in grasses in patches.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	The number of species in F/S groups is slightly reduced. There is an increase in catclaw and snakeweed.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:						
B	Annual Production				X	
Comments:	Estimated to be >80% of potential.					
B	Invasive Plants				X	
Comments:	No true invasives, but catclaw and snakeweed (increasers) are increasing.					
B	Reproductive Capability of Perennial Plants					X
Comments:	Moderate to heavy use on desirable grasses such as black grama and blue grama may be affecting their ability to produce seed.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn and mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X

Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

### Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	0	6	7

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with few signs of soil movement or loss.	0	0	10
Hydrologic		0	0	11
Biotic	Diversity of grasses is relatively good. Black grama is the dominant grass. There is an increase in catclaw acacia and snakeweed.	0	0	13

Site Notes: Soil is relatively stable with only few signs of soil movement or loss. Diversity of grasses is relatively good. Black grama is the dominant grass. There is an increase in catclaw acacia and snakeweed.

Two sets of photos were taken. The 2006 photos do not match the transect bearing sheet. The 1st set of the 2007 photos follow the instructions. The 2nd set of photos imitate the 2006 photos.

A gully has formed south of the stock tank west of this point.

Plants encountered included:

shrubs: ACGR, OPUNT (cholla), GUSA, eagle claw cactus forbs: SPHAER, ERBO, Camissonia spp., verbena grasses: MOSQ, SCBR, BOER, ARIST, MUHLY, TRIDENS

**RFOs Upland and Biotic Standard Assessment Summary Worksheet**

**SITE 64084-SOUTH-F262**

Legal Land Desc	NWNE 5 0090S 0220E Meridian 23	Acreage	1653
Ecosite	070BY052NM LOAMY CP-2	Photo Taken	Y

Watershed	13060005070 SALT		
Observers	BRITTON/REBITZKI	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	ECC	Soil Taxon Name	ECTOR
Texture Class	NM644 L	Soil Phase	ECTOR-CONGER
Texture Modifier	NM644 VERY COBBLY LOAM		
Observed Avg Annual Precipitation	20.71	Observed Avg Growing Season Precipitation	15.33
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	Cattle are in the area. Grazing was heavy on desirable grasses. The study plot is very near a drainage. There is a road and pipeline nearby that is eroding. The study plot area appears disturbed. The adjacent drainage has flooded. Large debris collections are abundant.		

## Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills			X		
Comments:	Some rills are developing, mostly associated with cow trails. Rills are forming on slope areas on the south side of the drainage in areas with reduced vegetative cover.					
S H	Water Flow Patterns			X		
Comments:	Water flow patterns in the bottom, near the drainage are few and stable. Outside the bottom area, they are more numerous and are showing minor erosion.					
S H	Pedestals and/or Terracettes			X		
Comments:	There is some active pedestalling and formation of mini terracettes.					
S H	Bare Ground					X
Comments:	Less than the expected 38%. Away from the bottom area, there is substantial surface cobble.					
S H	Gullies			X		

Comments:	The adjacent drainage has flooded and has active cutting and deposition. There is a side drainage that as a very deep, active gully.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:	There are no wind deposition areas.					
H	Litter Movement				X	
Comments:	Throughout the general area, there is litter movement. There is substantial litter movement in the immediate drainage. Large litter deposits are common.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Away from the bottom area with the study plot, resistance is reduced throughout. In the immediate vicinity of the plot, resistance is high.					
S H B	Soil Surface Loss or Degradation			X		
Comments:	Away from the study plot and the bottom area, soil loss is evident by the amount of pedestalling.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Herbaceous ground cover is much higher than expected in the bottom area near the study plot. It is near expected amounts away from the bottom area, but there are patches that have less cover that are scattered throughout. This is trending toward "moderate".					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	The number of species in F/S groups is slightly reduced. Tobosa grass dominates the site, particularly the bottom areas. Black grama appears to be greatly reduced from expected.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Near the expected amount of 25%.					
B	Annual Production				X	
Comments:	Estimated to be 60-80% of potential.					
B	Invasive Plants				X	
Comments:	Salt cedar has established along the drainage. A thistle (possibly musk thistle) is scattered throughout the bottom areas. Cholla and mesquite are widely scattered throughout.					
B	Reproductive Capability of				X	

	Perennial Plants					
Comments:	Moderate to heavy use on desirable grasses such as black grama and blue grama may be affecting their ability to produce seed.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn and mule deer.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

### Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	6	1	3
H	Hydrologic	0	0	6	2	3
B	Biotic	0	0	2	5	6

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soil is relatively unstable with some evidence of soil loss as indicated by pedestalling. There are active rills and gullies in the area.	0	6	4

Hydrologic		0	6	5
Biotic	There is moderate soil loss and degradation. Tobosa grass dominates lower areas. Black grama is deficient. Litter amount is within the expected range. Production is 60-80% of potential.	0	2	11

Site Notes: The study plot is in an area with bottomland characteristics. This loamy site follows along a drainage that heads near State Hwy 48 about 4 miles to the south. The drainage has been subject to heavy flooding. Soil stability varies. At the study plot, soil is relatively stable. Away from the plot and on areas with some slope, soil is less stable. The main drainage channel has eroded and braided due to heavy flooding. Large debris dams and deposits are common. There is a side drainage nearby that has a very large active head cut. Rills have formed along cow trails and along the slope break in several places. Away from the bottom area, pedestals are common. North of the plot is a pipeline and access road. A gully is forming along this road.

Salt cedar has established along the main drainage. An unknown thistle (possibly musk thistle) is scattered in the bottom areas. Cholla and mesquite are widely scattered throughout the area. Grazing on desirable grasses was heavy.

Plants encountered included: shrubs: TAMARISK, PRGL, OPUNT (cholla, prickly pear), GUSA  
forbs: CIRCI, VERBENA, ALLIUM, Plantago spp., locoweed, numerous unk forbs  
grasses: HIMU, BOGR2, SPAI, TRPI, BOCU, ARIST, SCBR

**RFOs Upland and Biotic Standard Assessment Summary Worksheet**

**SITE 64084-SOUTHEAST-F257**

Legal Land Desc	SENE 2 0090S 0210E Meridian 23	Acreage	465
Ecosite	042CY025NM SHALLOW SD-3	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	JACKSON; DILLEY	Observation Date	04/21/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	UEC	Soil Taxon Name	UPTON
Texture Class	NM644 GR-L	Soil Phase	UPTON- ECTOR DRY
Texture Modifier	NM644 GRAVELLY LOAM,DRY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	There is an old road bed. No recent grazing use observed.		

**Part 2. Attributes and Indicators**

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	A few are present in what is likely an old road, but they are minor.					
S H	Water Flow Patterns				X	
Comments:	short and stable					
S H	Pedestals and/or Terracettes				X	
Comments:	Evidence of past pedestal formation is present.					
S H	Bare Ground					X
Comments:	less than expected.					
S H	Gullies					X
Comments:	None.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement					X
Comments:	Very minimal displacement.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Only slight reduction in interspaces. Generally, surface resistance is high.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	Pedestals are evidence of past loss.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:	Increase in snakeweed may be having a minor effect.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Slight reduction in number of grass species expected. Black grama is the dominant grass. Species diversity is slightly off. Snakeweed is increasing.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X

Comments:						
B	Annual Production					X
Comments:						
B	Invasive Plants				X	
Comments:	There were no true invasives, but snakeweed (an increaser) is much higher than expected.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Mostly physical crusts.					
B	Wildlife Habitat					X
Comments:	Satisfactory for mule deer and pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

### Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	0	5	5
H	Hydrologic	0	0	0	5	6
B	Biotic	0	0	0	5	8

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable with little evidence of soil movement or loss.	0	0	10
Hydrologic		0	0	11
Biotic	Grass diversity is somewhat low, but black grama is the dominant grass as expected. Production is good. Litter amount is good. Snakeweed is greater than expected.	0	0	13
<p>Site Notes: Soil is relatively stable. There is little evidence of soil movement or loss. The diversity of grasses appears low. Black grama is the dominant grass as expected. There was a large standing crop of black grama left from last year. Snakeweed is much higher than expected in the ESD.</p> <p>Plants encountered included: shrubs: GUSA, ACCO forbs: Lesquerella spp., locoweed grasses: TRIDE, ARIST, BOER, SCBR</p>				

<b>RFOs Upland and Biotic Standard Assessment Summary Worksheet</b>			
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<b>SITE 64084-WEST-F261</b>			
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Legal Land	SWSW 18 0090S 0220E		
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		Acreage	894
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Desc	Meridian 23		
Ecosite	042CY007NM LOAMY SD-3	Photo Taken	Y
Watershed	13060005070 SALT		
Observers	BRITTON/ REBITZKI	Observation Date	04/20/2007
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	CRB	Soil Taxon Name	CONGER
Texture Class	NM644 SIL	Soil Phase	CONGER-REAGAN
Texture Modifier	NM644 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	10.57	NOAA Growing Season Precipitation	8.18
NOAA Avg Annual Precipitation	9.91	NOAA Avg Growing Season Precipitation	8.01
Disturbances and Animal Use:	A county road passes through the site and is contributing to erosion. An old two track road passes through to the east and has turned into a gully. The area has been heavily grazed. Estimated use is near 70% on black grama;, 60% on blue grama and 35% on tobosa.		

## Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	Generally none, but rills have formed from a 2 track road.					
S H	Water Flow Patterns				X	
Comments:	Generally short and stable, but more pronounced coming off of county road.					
S H	Pedestals and/or Terracettes			X		
Comments:	There are pedestals throughout the area, but pedestals are very evident and active in flow patterns coming off of county road.					
S H	Bare Ground					X

Comments:	A little less than the expected amount of 40-50%.					
S H	Gullies				X	
Comments:	There is an active gully near the study plot that has formed from an old road. It is stabilizing with vegetation on the bottom, but there is active head cutting.					
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:	Trending toward "moderate". There is some displacement and places with small concentrations around snakeweed and larger clumps of grass.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Aggregate stability was generally good, but there is a slight reduction throughout.					
S H B	Soil Surface Loss or Degradation				X	
Comments:	There is some soil loss as indicated by pedestals.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:	There are large areas with less cover that have abundant snakeweed that are being affected. These are usually areas with a little more slope.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:	Trending toward moderate. Tobosa grass dominates the site. Black grama and blue grama are still well represented in the composition. There are patches across the landscape that are mostly snakeweed. These are usually areas with a little more slope.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount			X		
Comments:	Near or slightly below the expected range of 25-30%.					
B	Annual Production				X	
Comments:	Estimated to be 60-80% of potential.					
B	Invasive Plants				X	
Comments:	Mesquite and cholla are widely scattered.					
B	Reproductive Capability of Perennial Plants				X	
Comments:	The heavy use on black grama and blue grama suggests that grazing intensity may					

	be having an effect.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Evident throughout, but continuity is broken.					
B	Wildlife Habitat					X
Comments:	Satisfactory for pronghorn.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	N/A					
B	Special Status Species Populations					X
Comments:	N/A					

### Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	3	5	3
B	Biotic	0	0	1	7	5

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	Soils are relatively stable, but soil loss has occurred as indicated by plant pedestals. There is a slight reduction in resistance to erosion throughout the area.	0	1	9
Hydrologic		0	3	8
Biotic	Areas with a little slope are occasionally dominated by	0	1	12

	snakeweed. Most flatter areas are dominated by tobosa. There is a slight reduction in grass species. Annual production was estimated to be 60-80% of potential. Mesquite and cholla are widely scattered throughout the site.			
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Site Notes: Soil is relatively stable, but loss has occurred as indicated by pedestalling. Near the study plot, this situation is exacerbated by runoff from the county road. An old road has turned into a gully. Runoff from the road is directed into this area and to the gully. The flatter areas are heavily dominated by tobosa grass. Areas with some slope are occasionally dominated by snakeweed.

The area had been grazed.

plants encountered included:

shrubs: GUSA, OPUNT (cholla), yucca, PRGL forbs: PLPA, verbena, ASTER, evening primrose grasses: HIMU, BOGR, BOER, TRPI

# **Determination of Public Land (Rangeland) Health for 64084 THUNDERHEAD RANCH**

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these standards.

Field assessment worksheets and other available data that evaluate the local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within Thunderhead Ranch allotment #64084, meets the (1) Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered, and Special Status Species standard. There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

/s/ J. Howard Parman  
Assistant Field Manager

08/12/2010  
Date