

## Standards of Public Land Health

### Evaluation of 65073 MILLARD DERRICK Allotment

[ 07/27/2005 ]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within Millard Derrick, allotment #65073. These assessments evaluated Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within each study site location. 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
65074-EAST-DERRICK-D131	X			X			N/A		
65074-WEST-DERRICK-D132 (*)	X			X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on Millard Derrick, allotment #65073. Ten (10) 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 two trend plot locations were utilized to assess rangeland health of public land within this allotment. 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.

West Pasture, contains the first study site on this allotment. It is located approximately 1 mile from water just adjacent to the western allotment boundary fence. The Ecological Site is SD-3 Sandy on 545 acres/220 hectares. Soil is a Pajarito-Pintura complex which occurs on uplands and fans below indurated caliche breaks east of the Pecos River. Slopes are 0 to 5 and 15 percent on elevations between 3,400 ft/1,030 m and 3,900 ft/1,182 m. Livestock were observed within this pasture but congregated close to the windmill and trough 3/4 to 1 mile away. Indicators assessed mainly fell within normal range of variability. Indicators of concern are bare ground, litter movement, functional/structural groups and invasive plants. Bare ground is estimated at 60 percent and slightly exceeds the long-term average. It doubles the parameters for ESD (Ecological Site Description) however and rates Moderate. There also exists Moderate reductions for plant groups. Shinnery oak (*Quercus havardii*), sand sage (*Artemisia filifolia*) and mesquite (*Prosopis glandulosa*) are the dominant shrubs. Snakeweed (*Gutierrezia sarothrae*) is also in abundance. Invasive plants rates Moderate to Extreme with mesquite and snakeweed common

and encroaching. A recruitment of mesquite seedlings and younger plants is also observed. Litter, although exceeding long-term averages is piling in depressional areas and up against obstructions due to water movement. Litter movement rates Moderate as a result. A forb crop of croton (*Croton* spp.), buckwheat (*Eriogonum* spp.) and deer's tongue (*Cryptantha* spp.) is aiding to diversity and soil protection. Threeawn (*Aristida* spp.), bush muhly (*Muhlenbergia porteri*) and dropseed (*Sporobolus* spp.) are on site as well but in reduced amounts. Most black grama (*Bouteloua eriopoda*) has been grazed to 1-2" stubble heights but remains in generous proportions. All other indicators rate either None to Slight and Slight to Moderate exhibiting normal range of variability from established parameters. A two-track leading into this area impacts this site and immediate vicinity with minimal impacts laterally.

East Pasture is a SD-3 Deep Sand Ecological Site on 2,411 acres/976 hectares. The soil is a Berino-Cacique association and occurs on aeolian/alluvial deposits on uplands east of the Pecos River. The elevation is 3,400/1,030 m to 3,800 ft/1,151 m with 0 to 3 percent slopes. Cattle were observed at this site which is just east of the dirt tank and trough. This study area is in very good condition. Indicators deviated only slightly from ecological reference areas and descriptions. The litter content and vegetative ground cover are more than adequate for site protection. Functional/structural groups indicates reductions in grass and shrub species. Black grama, dropseed and panicums (*Panicum* spp.) have been reduced in favor of threeawn to warrant a Moderate rating. Shinnery oak is down from previous years but annual production remains within normal range of long-term average and ESD parameters, estimated at 700-800 lbs/ac or kg/ha. Mesquite is scattered but not an immediate threat to encroach. Invasive plants rates Moderate. An adequate mulch layer exists holding soil in place along with physical crust. Some down-cutting off the two-track is observed heading into adjacent arroyos. Although prevalent, this occurrence poses no immediate erosional concern due to it being a natural activity regardless of road disturbance.

In the professional opinion of the Assessment Team, public land within Millard Derrick allotment #65073, meets Upland and Biotic Standards. There are no Riparian issues present, therefore this standard was not addressed. See site notes and recommendations for additional information regarding assessments for ecological sites within this allotment.

The (\*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Invasive Plants

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

**Recommendations:** Possible brush control is recommended to curtail mesquite encroachment. Recent dry condition is conducive to shrub invasion. Prudent livestock stocking and distribution by the allottee is recommended to help the range recover from past conditions. A two-track in East Pasture is in need of some maintenance and should be further evaluated to curtail some downcutting occurring there.

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

**SITE 65074-EAST-DERRICK-D131**

Legal Land Desc	SWSW 4 0130S 0290E Meridian 23	Acreage	2411
Ecosite	042CY005NM DEEP SAND SD-3	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	NAVARRO/ARTHUN	Observation Date	07/27/2005
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	BE	Soil Taxon Name	BERINO
Texture Class	NM666 FS	Soil Phase	BERINO- CACIQUE
Texture Modifier	NM666 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.18	NOAA Growing Season Precipitation	8.65
NOAA Avg Annual Precipitation	13.25	NOAA Avg Growing Season Precipitation	10.94
Disturbances and Animal Use:	Cattle are present, but pose no concern.		

**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:						
S H	Water Flow Patterns					X
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground				X	
Comments:	Current estimate is 40%.					
S H	Gullies					X

Comments:						
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:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff					X
Comments:	Plenty of ground cover in the from of litter.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	Threawn has replaced most all the grasses.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Current estimate is 40%.					
B	Annual Production				X	
Comments:	The current estimate is 700-800 lbs/ac or kg/ha.					
B	Invasive Plants			X		
Comments:	Mesquite is scattered.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	A good physical crust exists.					
B	Wildlife Habitat			X		
Comments:						
B	Wildlife Populations			X		

Comments:						
B	Special Status Species Habitat			X		
Comments:						
B	Special Status Species Populations			X		
Comments:						

**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	6	3	4

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		0	0	10
Hydrologic		0	0	11
Biotic		0	6	7

Site Notes: This site is a deep sand SD-3. Currently there is a herd of cattle using this upland site. A very good mulch layer exists which is aiding in infiltration and protection of the soil. Threeawn is the dominant grass with dropseed and panicum in much lesser amounts. Forbs in the form of croton, mentzelia, buckwheat and aster are in abundance. Mesquite is scattered with shinnery reduced. No bluestem species were observed.

Some gullyng occurs off the road leading into an arroyo. Vegetation is adequate on the slopes however, stabilizing the banks.

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

**SITE 65074-WEST-DERRICK-D132**

Legal Land Desc	SESW 6 0130S 0290E Meridian 23	Acreage	545
Ecosite	042CY004NM SANDY SD-3	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	NAVARRO/ARTHUN	Observation Date	07/27/2005
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Pb	Soil Taxon Name	PAJARITO
Texture Class	NM666 FSL	Soil Phase	PAJARITO-PINTURA
Texture Modifier	NM666 FINE SANDY LOAM,ER		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.18	NOAA Growing Season Precipitation	8.65
NOAA Avg Annual Precipitation	13.25	NOAA Avg Growing Season Precipitation	10.94
Disturbances and Animal Use:	The two-track runs through the site and transect legs. No rebar was found for the trend plot location. The cage was also missing. Influences from the road and cattle are 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:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		

Comments:	60% is the current estimate.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement			X		
Comments:	The litter is piling up in depressions.					
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:	Some trailing exists.					
B	Functional/Structural Groups			X		
Comments:	Some of the species have been reduced in favor of threeawn. Snakeweed and mesquite are common.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	The current estimate is 40%					
B	Annual Production				X	
Comments:	Reconstruction of the black grama and dropseed was performed. The current estimate is 500 lbs/ac or kg/ha.					
B	Invasive Plants		X			
Comments:	Mesquite and snakeweed is common.					
B	Reproductive Capability of Perennial Plants				X	
Comments:	Black grama has been utilized to 1-2" stubble height. Stolon formation is somewhat limited on most of the black grama but the threeawn is virtually un-touched.					
S	Physical/Chemical/Biological Crusts				X	

Comments:	An adequate physical crust exists.					
B	Wildlife Habitat			X		
Comments:	Browse for deer and lagomorphs observed.					
B	Wildlife Populations			X		
Comments:						
B	Special Status Species Habitat				X	
Comments:						
B	Special Status Species Populations			X		
Comments:						

### 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	2	6	3
B	Biotic	0	1	4	6	2

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		0	1	9
Hydrologic		0	2	9
Biotic		1	4	8

Site Notes: This site is located at the west end of the allotment along the fenceline. No rebar was found and the cage was also missing.

Black grama and dropseed have been utilized to restrict some reproductive capability. Very minute amounts of bluestem is on site with threawn the dominant grass. Bush muhly is also in

abundance but appears to be ungrazed. Forbs in the form of croton, cryptantha, and buckwheat are in abundance.

Mesquite is common with the potential to encroach and dominate. Very many young seedlings were observed of this shrub. Snakeweed is also common throughout.

# **Determination of Public Land (Rangeland) Health for 65073 MILLARD DERRICK**

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 local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within Millard Derrick, allotment #65073, meets the 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

Acting Assistant Field Manager

08/08/2005

Date