

Standards of Public Land Health

Evaluation of 63074 LOWER WILLOWS RANCH

Allotment

[01/11/2010]

The Roswell Field Office conducted rangeland health assessments at 2 study sites within 63074 LOWER WILLOWS RANCH. The assessments looked at the 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 the field assessment. The 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
63074-NORTH-F082 (*)			X			X	N/A		
63074-SOUTH-F083 (*)			X			X	N/A		

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

- Water Flow Patterns
- Pedestals and/or Terracettes
- Bare Ground
- Gullies
- Litter Movement
- Soil Surface Resistance to Erosion
- Plant Community Composition and Distribution Relative to Infiltration and Runoff
- Functional/Structural Groups
- Litter Amount
- Annual Production
- Invasive Plants
- Reproductive Capability of Perennial Plants
- Physical/Chemical/Biological Crusts

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

Causal Factors: Rangeland Health assessments conducted in January 2010 indicate nearly every soil, hydrologic and biotic attribute for all indicators are not meeting the Upland and Biotic Standards. Monitoring conducted approximately every 5 years also indicates this allotment had been improving and was considered to be in ‘High Fair’ condition.

The allotment also has been invaded by mesquite and creosote which has hastened the decline in the range condition. The indicator for Invasive Species at both study locations was rated as either “Moderate to Extreme” or “Extreme” departure from the ecological range site description. This in combination with soil conditions and dry weather patterns have contributed to poor range conditions. During drought conditions deep-rooted mesquite out-competes fibrous rooted herbaceous plants for available water and nutrients. Creosote roots produce a compound which prevents the establishment of other shrubs in close proximity. This has led to reduced perennial grass production, virtually no forb growth, higher than normal plant mortality and decadence, increased erosion and overall range deterioration.

The North study is located in a Sandy SD-2 ecological site. Species such as black grama, fourwing saltbush and longleaf ephedra were not noted as being present. Even though, mesquite, creosote, and Christmas cactus had been present during previous data collections, the amount of each had increased drastically.

Recommendations:

The team has made the following recommendations: shrub (mesquite and creosote) control across the entire allotment, with a following minimal rest of two growing seasons – dependent upon moisture received post treatment. In those areas populated by Christmas cactus, a prescribed fire may be used.

A prescribed fire along the sacaton draw which crosses the North Pasture.

Upgrading the water pipeline in the South Pasture.

Extension of the pipeline in the North Pasture – alleviate over use near the existing water location.

Construction of a cross fence in North pasture to separate the shrub-dominated uplands from the loamy plains.

Reduce the authorized level of use by livestock until conditions improve.

Conduct vegetation studies and establish additional study sites, complete the studies every 5 years or more frequently.

Work with the NRCS, Soil & Water Conservation Districts and the NM State Land office to implement these changes.

The team also recommends that the Rangeland Health Assessment be done annually and that allotment compliance checks be completed on a sporadic schedule.

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 63074-NORTH-F082

Legal Land Desc	SESE 23 0080S 0080E Meridian 23	Acreage	5486
Ecosite	042BY012NM SANDY SD-2	Photo Taken	Y
Watershed	13050003050 MALPAIS		
Observers	TRAUTNER, ORTEGA, ARNOLD, MCGEE	Observation Date	01/11/2010
County Soil Survey	NM632 LINCOLN	Soil Var/Taxad	
Soil Map Unit	095	Soil Taxon Name	TULARGO
Texture Class	NM632 L	Soil Phase	TULARGO- ANDERGEORGE
Texture Modifier	NM632 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	1.29	NOAA Growing Season Precipitation	0
NOAA Avg Annual Precipitation	0.96	NOAA Avg Growing Season Precipitation	0
Disturbances and Animal Use:			

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:	None present					
S H	Water Flow Patterns				X	
Comments:	Mostly short and stable, some instability					
S H	Pedestals and/or Terracettes			X		
Comments:	Occasional roots exposed, some pedestalling					
S H	Bare Ground				X	
Comments:	Ecological site description says up to 75%, this site was 40-50%, bare ground is connected.					

S H	Gullies					X
Comments:	None present					
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:	soil being deposited around mesquite.					
H	Litter Movement			X		
Comments:	Some in innerspaces, but most is around obstructions.					
S H B	Soil Surface Resistance to Erosion			X		
Comments:	reduced greatly in innerspaces, more organic matter under canopy					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff		X			
Comments:	Plant cover changing to shrubs and much less grass					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups		X			
Comments:	a lot of undesirable shrubs, mesquite, snakeweed, reduced level of desirable grasses.					
B	Plant Mortality/Decadence				X	
Comments:	About 20% dead, some snakeweed and mesquite are dying.					
H B	Litter Amount				X	
Comments:	About 15%, but not 1 cm thick - ecological site description calls for 10% and 1 cm in depth.					
B	Annual Production		X			
Comments:	Very little grass production, more shrubs than expected for the site.					
B	Invasive Plants	X				
Comments:	Mesquite and snakeweed, excluding portion of the pasture on the west side.					
B	Reproductive Capability of Perennial Plants		X			
Comments:	Some shrubs are dying, poor reproduction by grass species.					
S	Physical/Chemical/Biological Crusts		X			
Comments:	Very little in innerspaces.					
B	Wildlife Habitat					
Comments:						

B	Wildlife Populations			X		
Comments:	Poor browse species and forb availability.					
B	Special Status Species Habitat					
Comments:	Not applicable					
B	Special Status Species Populations					
Comments:	Not applicable					

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	1	3	3	3
H	Hydrologic	0	1	3	4	3
B	Biotic	1	3	2	3	1

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		1	3	6
Hydrologic		1	3	7
Biotic		4	2	4

Site Notes: Base water is not working in the area north of the malpais. No water available at all north of the malpais.

Species noted at this location: Mesquite, snakeweed, creosote, christmas cactus, dropseed species, tobosa, Desirable grama grasses are absent. Heavy shrub dominance.

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 63074-SOUTH-F083

Legal Land Desc	NWNW 31 0080S 0090E Meridian 23	Acreage	6644
Ecosite	042BY014NM LOAMY SD-2	Photo Taken	Y
Watershed	13050003060 COTTONWOOD		
Observers	TRAUTNER, ORTEGA, ARNOLD, MCGEE	Observation Date	01/11/2010
County Soil Survey	NM632 LINCOLN	Soil Var/Taxad	
Soil Map Unit	095	Soil Taxon Name	TULARGO
Texture Class	NM632 L	Soil Phase	TULARGO- ANDERGEORGE
Texture Modifier	NM632 LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	1.29	NOAA Growing Season Precipitation	0
NOAA Avg Annual Precipitation	0.96	NOAA Avg Growing Season Precipitation	0
Disturbances and Animal Use:			

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:	mostly on the hillsides.					
S H	Water Flow Patterns	X				
Comments:	Water flow patterns all connected, Moderate to Extreme on hillsides.					
S H	Pedestals and/or Terracettes	X				
Comments:	Occasional exposed roots, active pedestalling on most plants and rocks.					
S H	Bare Ground		X			

Comments:	Trending toward Extreme, 80% bare ground near trend plot, 50% in areas east of the study location, well connected areas of bare ground.					
S H	Gullies		X			
Comments:	One main gully, needs to be more vegetated.					
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:						
H	Litter Movement	X				
Comments:	Very little in innerspaces, mostly accumulating around obstructions.					
S H B	Soil Surface Resistance to Erosion		X			
Comments:	Trending toward Extreme, Organic matter virtually absent in innerspaces, reduced under canopy.					
S H B	Soil Surface Loss or Degradation			X		
Comments:	Especially in innerspaces					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff		X			
Comments:	Very little desirable species present, a lots of creosote bush and mesquite here.					
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups		X			
Comments:	shifting from grammas and desirable shrubs to tobosa, creosote and mesquite.					
B	Plant Mortality/Decadence				X	
Comments:						
H B	Litter Amount		X			
Comments:	Very little in innerspaces, approximately 15% on slopes, 0% on low lands.					
B	Annual Production			X		
Comments:	Not up to production levels in grasses, alot of mesquite.					
B	Invasive Plants		X			
Comments:	Mesquite and creosote common					
B	Reproductive Capability of Perennial Plants			X		
Comments:	Limited from runoff and creosote toxins in the soil					
S	Physical/Chemical/Biological Crusts		X			
Comments:	Only in protected areas.					

B	Wildlife Habitat			X		
Comments:	Better for small animals than for large game animals, no forbs or good browse species available.					
B	Wildlife Populations			X		
Comments:						
B	Special Status Species Habitat					
Comments:	Not applicable					
B	Special Status Species Populations					
Comments:	Not applicable					

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	2	4	3	0	1
H	Hydrologic	3	5	2	0	1
B	Biotic	0	4	5	1	1

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		6	3	1
Hydrologic		8	2	1
Biotic		4	5	2

Site Notes: Species noted at this site: Mesquite, creosote, tobosa, dropseed species.

Determination of Public Land (Rangeland) Health for 63074 LOWER WILLOWS 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 the 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 the assessments, it is my determination that the public land within the Lower Willows Ranch, #63074, does NOT MEET the (1) Upland Sites Standard, and (2) Biotic Communities, including Native, Threatened, Endangered and Special Status Species Standard. There are no Riparian areas within this allotment so this Standard was not addressed.

/s/ J. Howard Parman
Acting Assistant Field Manager

04/15/2010
Date