

## Standards of Public Land Health Evaluation of 65053 CULP RANCH Allotment [ 10/15/2005 ]

The Roswell Field Office conducted (RHA) Rangeland Health Assessments at 14 study sites within Culp Ranch, allotment #65053. 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 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
65053-BIG ADAMS-D142 (*)	X			X	*		N/A		
65053-BULL-D144	X			X			N/A		
65053-CRUMP-D138 (*)	X				*	X	N/A		
65053-EAST MALMSTROM-D147 (*)	X			X			N/A		
65053-HORSE-D146	X			X	*		N/A		
65053-LITTLE ADAMS-D145	X			X			N/A		
65053-NE-D139 (*)	X				*	X	N/A		
65053-PIPELINE-D143 (*)	X				*	X	N/A		
65053-RUND-D150 (*)	X				*	X	N/A		
65053-SE CULP-D140 (*)	X				*	X	N/A		
65053-SHINNERY-D148	X			X			N/A		
65053-SO MALMSTROM-D151 (*)	X				*	X	N/A		
65053-SOUTH	X				*	X	N/A		

CULP-D141 (*)									
65053-WEST MALMSTROM- D149	X			X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for public land on Culp Ranch, allotment #65053. Ten (10) of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with previous long-term quantitative data gathered on 14 trend plot locations were utilized to determine rangeland health of public land within this allotment. These data collections which were initiated in the late 1970's/early 1980's are scheduled and performed by the Roswell Field Office every 5 years and include some or all of the following: ground and vegetative cover and composition, production, frequency, occurrence and ecological condition.

Fourteen sites were assessed on this allotment. All assessments evaluated soil, hydrological and biotic attributes. A portion of this allotment lies within the (LPC) Lesser Prairie Chicken (*Tympanuchus pallidicinctus*) Core Area. Those sites occurring within this Core Area occur in pastures: Crump, NE, Pipeline, SE Culp, S. Culp, Rund & S. Malmstrom.

Two SD-3 Shallow Sandy Ecological sites were evaluated corresponding to Horse and Shinnery Pastures respectively. Both pastures consist of a Simona soil series, fine sandy loam well-drained with very shallow to shallow to indurated caliche, formed in aeolian and alluvial sediments on uplands east of the Pecos River. Slopes are 0 to 5 percent with elevation between 3,400 ft/1,030 m and 3,800 ft/1,151 m. White indurated caliche is at depths of 13 in/33 cm. Soil profile is noncalcareous and mildly alkaline in surface layers and becomes moderately to strongly calcareous and moderately alkaline in subsoil and substratum.

Horse Pasture located on private land, indicator's ranged from None to Slight to Moderate. Those of concern rating Moderate are bare ground, soil surface resistance to erosion, functional/structural groups, annual production, invasive plants and wildlife habitat. Bare ground is estimated at 50 percent approaching upper ends of range expected. Interspace soil ped samples melted readily using soil-site stability test. Canopy samples remained intact. Black grama (*Bouteloua eriopoda*) has been reduced to only a few remaining patches and difficult to locate. Bush muhly (*Muhlenbergia porteri*) can be found in between shrubs. Production is estimated at 450 lbs/ac or kg/ha, approximately 1/2 of the long-term average and ESD figures. Approximately half of this estimate is comprised of shrubs, however. Threawn (*Aristida* spp.) has become dominant on site. Shrubs recorded as scattered throughout are mesquite (*Prosopis glandulosa*), yucca (*Yucca* spp.) and snakeweed (*Gutierrezia sarothrae*), rating invasives Moderate at 20 percent cover with potential to encroach and dominate. Cattle are presently utilizing this pasture at moderate levels.

Wildlife habitat is Moderately below it's potential; too much mesquite is present for good pronghorn (*Antilocapra americana*) habitat. The presence of threawn and mesquite has reduced any potential cover for wildlife to just a few scattered pockets. Most biotics currently deviate at Moderate levels with those remaining indicators exhibiting normal range of variability from established/expected parameters. No special status species issues exist on this site.

Shinnery Pasture, with 1,199 acres (485 hectares) public land rated the majority of indicators None to Slight and Slight to Moderate indicating normal range of variability. This upland site is enroute to a water storage tank via a two-track. This study site was re-evaluated from January 2006 and confirms the initial assessment's ratings. Although the study is located on private land, the pasture itself consists more of public and state. Of concern are invasive plants with mesquite scattered with very little threat to encroach at the moment. Interspace soil ped samples melted rapidly while that under canopy held together. Annual production is estimated at 400 lbs/ac or kg/ha is only 1/2 of potential and 1/2 of ESD figures.

Habitat for pronghorn is excellent with a wide diversity of forb species and good for deer and quail also. This site is also currently grazed at conservative levels. Javelinabush (*Condalia* spp.) and yucca are the primary shrubs here. Black grama and sand dropseed (*Sporobolus cryptandrus*) are two perennial grass species observed along with forbs like croton (*Croton* spp.), buckwheat (*Eriogonum* spp.), bladderpod (*Lesquerella fendleri*), wooly plantain (*Plantago* spp.), hog potato (*Hoffmanseggia* spp.) and twin-leaf senna (*Cassia* spp.).

Big Adams Pasture is a CP-2 Sandy Plains ecological site with a Faskin soil series on public land acreage of 1,090 (441 hectares). This well-drained, fine sand formed in aeolian and alluvial sediments on uplands with elevation between 3,500 ft/1,060 m and 4,100 ft/1,242 m. It occurs on uplands in the eastern parts of area surveyed and west of High Plains. Slope is 0 to 1 percent with a noncalcareous soil profile in upper parts and slightly calcareous in lower parts and mildly alkaline throughout. An indicator with soil and hydrological attributes of concern is bare ground, estimated at 50 percent. Threeawn has replaced grama grass here and rates functional/structural groups Moderate. In addition to Moderate departure is annual production which is down from previous years with a current estimate of 550 lbs/ac or kg/ha. Mesquite, snakeweed and yucca have encroached and are dominating this site. Invasive plants rates Extreme as a result. Livestock have grazed threeawn to 4 to 6 in. or approximately 10 to 15 cm. stubble height limiting reproductive capability of perennial plants. This indicator also rates Moderate.

A portion of wildlife habitat is in less than satisfactory condition. There exists no LPC habitat, but that for quail (*Callipepla* spp.) and pronghorn is fair. Moderate ratings were given to wildlife populations and habitat. Those remainder indicators evaluated exhibited normal range of variability.

Bull Pasture, primarily on private land is the lone SD-3 Limy ecological site, with a public land acreage of 4.0 (1.6 hectares) consists of a Jal fine sandy loam soil, deep well-drained which formed in alluvial and lacustrine sediments in depressional areas of uplands east of the Pecos River. Slope is 0 to 3 percent. Soil profile is moderately calcareous and alkaline in surface layers and strongly calcareous and alkaline in underlying material. Elevation is 3,500 ft/1,060 m to 3,800 ft/1,151 m. All indicators assessed rated None to Slight and Slight to Moderate, with exception invasive plants rating Moderate. Mesquite is scattered throughout and is estimated at 5-10 percent cover. This site possesses good open areas for pronghorn. Black grama and croton are both abundant, but shinnery oak is not on site, although it is found in proximity. Overall this pasture is in good condition indicating normal range of variability from ecological description/reference areas.

Little Adams Pasture, on private land is a SD-3 Deep Sand ecological site with a Berino-Cacique soil association that occurs in aeolian and alluvial deposits on uplands east of the Pecos River. Slopes are 0 to 3 percent on elevations between 3,400 ft/1,030 m and 3,800 ft/1,151 m. Nearly level Berino soil occurs in depressions and plane surfaces. Cacique soil, which is nearly level to gently undulating is generally found on ridges. All indicators with exception of wildlife habitat, rating Moderate, indicated normal range of variability with None to Slight and Slight to Moderate departure. Fair pronghorn habitat exists although some grass is lacking.

East Malmstrom Pasture, another SD-3 Deep Sand ecological site encompasses 1,588 acres (643 hectares) of public land. Soil phase is a Berino-Pintura complex that occurs on severely windblown areas on uplands east of the Pecos River. Slopes are 0 to 15 percent on elevations between 3,400 ft/1,030 m and 3,800 ft/1,151 m. Level to nearly level Berino soil is in windblown areas almost bare of vegetation. Erosion has exposed sandy clay loam subsoil and/or strongly calcareous substratum. Pintura soil is undulating to rolling on rounded to oval hummocks. These hummocks are partially stabilized by brush and sparse grasses. Those indicators for this pasture deviating at Moderate to Moderate to Extreme departure are: pedestals occurring on wind-swept areas with occasional terracettes. These wind-scoured blowouts and/or depositional areas are occasionally present with litter moving and piling up against obstructions and in depressional areas. Bare ground is now estimated at 60-70 percent doubling ESD parameters and exceeding long-term average figures. No bluestem species were observed and have been replaced by threeawn.

Functional/structural groups rates Moderate as a result. Annual production estimates are down from previous years and only 1/4 of ESD parameters. However, the majority of annual production is comprised of shrubs, threeawn and forbs. Mesquite and snakeweed are common throughout rating invasive plants Moderate to Extreme.

Wildlife habitat and populations also rate Moderate. This rating indicates average deer populations, with a portion of habitat in less than satisfactory condition and there exists potential for improvement. Very few or small amounts of sand bluestem (*Andropogon hallii*) grass were found remaining, but plains bristlegrass (*Setaria macroctacya*) and some panic grasses (*Panicum* spp.) remain.

West Malmstrom Pasture, was also re-evaluated from January 2006. This site is a CP-2 Deep Sand ecological site with a public land acreage of 3,486 (1,411 hectares) on Faskin-Malmstrom fine sand association occurring on uplands in the eastern part of areas surveyed and west of High Plains. Both series formed in aeolian and alluvial sediments on uplands. The substratum is strongly calcareous and moderately or strongly alkaline throughout. Slopes are 0 to 3 percent on elevations between 3,500 ft/1,060 m and 4,100 ft/1,242 m. Both Faskin and Malmstrom soil is level and occur in depressions and low ridges respectively. Moderate grazing is occurring here with buckwheat observed in huge amounts and seedheads of grass abundant. A majority of indicators assessed rated None to Slight and Slight to Moderate indicating normal range of variability. Bare ground estimates 50 percent moderately deviating. F/S groups have been modified from previously established compositional values. Annual production is down somewhat but still is estimated at 900 lbs/ac or kg/ha. Mesquite and snakeweed are scattered throughout and rate invasive plants Moderate.

Wildlife habitat and populations rate Moderate, and are in less than satisfactory condition. Bluestem species were lacking at evaluation. Although suitable habitat may exist, it is questionable if this site will ever have appropriate grass for LPC as there is no nesting habitat. Sand dune lizard (*Sceloporus arenicolus*) habitat also does not exist.

The remaining seven pastures evaluated lie within CP-2 (Pecos-Canadian Plains & Valleys) are Deep Sand ecological sites with soil comprised of a fine sand Roswell-Jalmar complex. This complex occurs on deep sand uplands in eastern parts of area surveyed and west of the High Plains. This Roswell and Jalmar soil formed in aeolian and alluvial sediments on uplands with slopes of 1 to 15 percent. Elevation is 3,500 ft/1,060 m to 4,100 ft/1,242 m. Both are deep and well-drained. Soil profile is noncalcareous and neutral and mildly alkaline in lower parts with substratum moderately alkaline.

Pipeline Pasture has 591 acres (239 hectares) public land, is located in the LPC Core Area. Indicators of concern with Moderate departure are bare ground, soil surface resistance to erosion, annual production and wildlife habitat. Special status species habitat is Moderate to Extreme. Little bluestem is grazed with some mesquite found in this pasture. Bare ground is currently estimated at 50-60 percent slightly exceeding the long-term average. Interspace soil ped samples fell apart while under the canopy held together. Resistance is reduced throughout. Annual production, estimated at 600-650 lbs/ac or kg/ha is only 1/2 of long-term average and 1/4 of ESD normal year figures. Little and sand bluestem are reduced and some is grazed.

A portion of wildlife habitat is in less than satisfactory condition. Insufficient grass cover exists for LPC nesting cover; no shinnery oak was observed. Although conducive to booming, nesting cover is inadequate at present. This pasture however has a record of lek activity in 1988 indicating LPC use at that time. Plant diversity is lacking here. All other indicators fell within normal range of variability indicating slight departure.

SE Culp and South Malmstrom Pastures both were very similar in ratings with those remaining indicators exhibiting normal ranges of variability. Public land acreage for SE Culp is 4,388 (1,776 hectares). South Malmstrom site, which is located on approximately 320 acres (129 hectares) private land, is 2,328 acres (942 hectares) in size respectively for all public land portions. Both these pastures are located within the LPC Core Area. SE Culp's study area however does not fall within the Core Area on the east side with the west 1/4 well within this Core.

Special status species habitat rates Moderate to Extreme for South Malmstrom however. Shinnery oak/grass ratio is 70:30. LPC winter and brood habitat in the form of shinnery is good, but lacks adequate residual grass height and clump size to provide open areas for good nesting cover. Most recent lek activity in 2003 indicates LPC populations at that time, but they have since disappeared likely due to habitat deterioration. Blowouts are stable with higher amounts of little bluestem. Sand bluestem is lacking however. Only one adequate nesting clump was observed on site. Special status species populations rated Extreme as there are no longer any active leks. Litter amount is comprised mostly of shinnery oak leaves. Most other indicators fell within normal range of variability.

SE Culp's indicators for special status species habitat and populations rate Moderate to Extreme. No nesting habitat for LPC exists with oak/grass ratio: 80/20 and 70/30 in some places. There are some clumps of residual grass for nesting, but small. This site contains the only known lek on this allotment. This was in 2006 but overall pop. density is very low, ie, down from several years ago.

Rund Pasture site on private estate, was re-evaluated from January of 2006 and confirms the original evaluation. Most of this pasture is public land and encompasses an acreage of 4,511 acres (1,826 hectares) and rated most indicators Slight to Moderate. However the majority of this pasture is public with some state, and is located just outside the LPC Core Area. Potential for suitable habitat does exist however and was rated accordingly. Soil surface resistance to erosion, functional/structural groups, and invasive plants departed Moderately from normal range of variability.

Poor LPC nesting habitat exists and is no longer sustainable. This degree of departure is dependent upon ratio of shrubs (shinnery oak:sand sage) to grass. A Moderate to Extreme habitat indicator rating for this pasture is assigned for LPC habitat due to significant decreases in proportion of tall grass species, sand bluestem, and to a lack of shinnery oak. Greater than half of this habitat is in less than satisfactory condition. A past herbicidal treatment accounts for some of this reduction. Lek activity was recorded in 1988, indicating suitable habitat in the past. Since then special status species populations have disappeared Populations of LPC no longer exist within this pasture. Recovery potential is severely limited as well.

South Culp Pasture, in the LPC Core Area, was re-assessed from January of 2006 due to the complexity of special status species issues. Public land acreage for this site is 5,045 acres (2,042 hectares) and rates all indicators with exception of two, None to Slight and Slight to Moderate and Moderate No livestock were recorded, but a small herd of pronghorn was observed. Bare ground is Moderately departing with a current estimate of 60 percent approaching and exceeding upper end of ranges expected. Soil surface resistance to erosion has been reduced throughout this site. Soil ped samples indicate a reduction using a soil site stability testing apparatus, in at least half the plant canopies and interspaces. Little bluestem has covered some blowout surfaces and helped re-vegetate those areas. An inadequate amount of bluestem exists, not too heavily grazed, ie, light to moderate levels at present, but provide little in the amount of nesting cover. Shinnery oak and sand sage are in abundance along with yucca. Few ungrazed bluestem species were observed indicating Moderate departure from ecological reference areas for functional/structural groups. This degree of departure is dependent upon ratio of shrubs (shinnery oak:sand sage) to grass.

A Moderate to Extreme habitat indicator rating for this pasture is assigned for LPC nesting habitat due to large decreases in proportion of tall grass species such as sand bluestem to shrubs like shinnery oak and sand sage. Lek activity in 1988 and 1989 indicates some potential for "booming" due to past upland activity in these areas. No leks or LPC reports in recent years indicate special status species populations have Extremely departed with very limited potential for recovery. Seed heads exist with some clumps of grass too small for nesting. Nesting cover is not near potential. These patches are not extensively large enough to consistently support LPC cover.

NE Pasture was re-evaluated as well due to special status species issues from January of 2006. This pasture also falls within the LPC Core Area with records of recent lek activity surrounding the site. This pasture has been deferred from grazing for one year. Public land acreage for this site is 5,401 acres (2,186 hectares) with livestock currently utilizing at light to moderate levels. Little bluestem is currently being grazed on blowout areas. Those small clumps of bluestem are grazed with remainder observed in open areas.

Special status species habitat and populations both rate Extreme indicating severe departure for habitat requirements and recovery potential for LPC is significantly limited. There is no suitable cover (residual grass) for LPC nesting however as reduced height of bluestem will not allow for sufficient cover at present. Special status species habitat rates Extreme as a majority of this habitat is in less than satisfactory condition. This pasture has some open areas as indicated by records of lek activity and "booming" in 2002. One bird was found on a lek in 2006 and none were observed in spring lek surveys for 2007. Threeawn has increased here suggesting a major replacement of the bluestem component which was dominant before. The functionality of those structural groups has been compromised. Threeawn, although an increaser due to utilization has some properties favoring ground protection but virtually none for nesting habitat.

Crump Pasture's immediate site rests on state land. Public land acreage is 2,700 (1,093 hectares), rates most indicators Slight to Moderate and None to Slight with exception special status species habitat and populations. Bare ground and functional/structural groups rate Moderate, with an estimate of 60% and number of F/S groups reduced and replaced with other groups not expected. Mesquite is scattered throughout and surrounding areas and rates invasive plants Moderate as well. Reproductive capability of perennial plants rates Moderate with seed and tiller production limited.

Special status species habitat and populations rate Extreme. No grass clumps or patches large enough to provide LPC nesting cover were found. Some little and sand bluestem was grazed so as to not allow for adequate cover. This degree of departure is dependent upon ratio of shrubs (shinnery oak:sand sage) to grass. An Extreme indicator rating for this pasture is assigned for LPC habitat due to high decreases in proportion of tall grass species such as sand bluestem to shrubs. Leks have been recorded in past years indicating this pasture contained suitable LPC habitat in the past. No leks were observed during recent spring surveys.

Evaluation of the integrity of biotic community considered several indicators as attribute indices for the areas of interest. Biotic indicators are interrelated with several other indicators, including soil/site stability, hydrologic function, and vegetation. Several indicators are singularly biotic and address the vegetative aspect of the ecological site description, such as functional/structural groups and plant mortality & decadence.

In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation. A unique assemblage of terrestrial species and avifauna can be expected to use this ecosystem. Of significance are the sand dune lizard (*Sceloporus arenicolus*) and lesser prairie chicken (*Tympanuchus pallidicinctus*) known only to occur within this ecosystem. The vegetation community of interest is the shinnery oak-tall grass type only found in this portion of the Field Office area. Key habitat components include sand

bluestem, shinnery oak, sand dune lizard habitat features (dune blowouts), and lesser prairie chicken habitat features (booming grounds & nesting areas). The amount, condition and juxtaposition of these habitat features are used as habitat indicators for this assessment. The assessment begins by determining if the site is within "Core Areas" for lesser prairie chicken (LPC) and sand dune lizard (SDL). Other important wildlife species and their habitats, such as desert mule deer (*Odocoileus hemionus*), pronghorn and a variety of game and non-game species are also considered in this assessment. This overall evaluation will focus on LPC and SDL available habitat with anecdotal commentary regarding the habitat for other wildlife species.

This allotment historically supported populations of lesser prairie chickens (LPC). During the late 1980's surveys indicated more than 20 leks scattered across Crump, NE Culp, SE Culp, S. Culp, Rund and S. Malmstrom pastures. During the 1990's LPC numbers fell drastically in the Caprock Wildlife prairie chicken range in which this allotment is located, with much of the drop attributed to drought. In 2004 rainfall improved resulting in better nesting conditions in 2005 and LPC lek counts in 2006 showed a nearly doubling of numbers over the previous year to the highest overall counts since the mid 1980's. On this allotment, however, the trend continued downward from 3 leks with 15 birds in 2005 to two leks with 14 birds in 2006 and one lek with 8 birds in 2007.

The lack of response of LPC nesting habitat despite improving weather conditions can be attributed to heavy utilization of the grass by livestock during and after drought. This heavy use has resulted in virtually no suitable residual grass clumps of size or height to provide nesting cover. This is reflected by the on-site health assessments of these pastures, as well as the Robel data for this allotment. On the basis of this data, this allotment does not meet criteria for special status species. In these pastures suitable grasses (bluestems) are present, but their growth and expansion has been suppressed by grazing.

In the professional opinion of the Assessment Team, public land within Culp Ranch, allotment #65053, meets the Upland but not the Biotic Standards for Special Status Species. There are several pastures evaluated that are approaching and exceeding the upper end of departure and would need further evaluation. There are no Riparian issues within this allotment, therefore this Standard was not addressed. See site notes and recommendations for additional information regarding the assessments within this allotment.

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

- Bare Ground
- Functional/Structural Groups
- Invasive Plants
- Special Status Species Habitat
- Special Status Species Populations

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

**Recommendations:** Native biotic communities in regards to lesser prairie chicken populations and appropriate habitat are in serious jeopardy. Several pastures do not meet the Biotic Standard for special status species. Those pastures with Moderate to Extreme and Extreme departure are of major concern and must be evaluated further. Herbivory, ie, livestock, wildlife, seasonal weather patterns and insects accompanied with overall climatic conditions occurring over the last several years have impacted all of this allotment, especially the range for LPC populations and habitat.

An overall reduction in livestock numbers for the entire allotment is recommended. Recent utilization levels have hindered the bluestem grass community from recovering, which LPC require for nesting and brooding. Deferment of grazing of those pastures, while allowing residual vegetation to re-establish for the lesser prairie chicken's habitat and population recovery is also recommended. This coupled with proper rest and rotation should commence as soon as possible. Former historical LPC range for this allotment is no longer available and proper measures must be taken to improve those site's productivity and resiliency and assist the lesser prairie chicken to occupy those areas once again, establish adequate habitat and sustain viable and healthy populations.

Those pastures where brush encroachment is approaching common and dominate levels should be critically evaluated to determine a plan for brush control: chemical, mechanical and Rx fire before those desirable plant communities are crowded out and hindered from producing valuable forage along with vegetational recruitment. Additionally site protection attributes such as proper water infiltration, soil protection and reduced runoff, organic matter integration, seed distribution and propagule establishment would benefit.

<b>RFOs Upland and Biotic Standard Assessment Summary Worksheet</b>			
<b>SITE 65053-BIG ADAMS-D142</b>			
Legal Land Desc	NENW 31 0110S 0300E Meridian 23	Acreage	1090
Ecosite	070BY055NM SANDY PLAINS CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	ARTHUN/MOE	Observation Date	01/19/2006
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Fa	Soil Taxon Name	FASKIN
Texture Class	NM666 LFS	Soil Phase	FASKIN
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98

NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:			

<b>Part 2. Attributes and Indicators</b>						
		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:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		
Comments: 50% is the current estimate approaching upper end of the range expected.						
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: Interspace and under canopy soil ped samples both indicate some erosion potential.						
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:						
B	Functional/Structural Groups			X		

Comments:	Some moderate departure exists. LPC's grass cover, more notably species for nesting is not here.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	Litter amount is now estimated at 50% far exceeding that expected.					
B	Annual Production			X		
Comments:	550 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants	X				
Comments:	Mesquite is dominating at 10 to 20% cover estimate and increasing.					
B	Reproductive Capability of Perennial Plants			X		
Comments:	Aristida grazed to 4-6" stubble heights. Some limitations exist due to reproductive capability compromised.					
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crust in interspaces fell apart-canopy is reduced in o.m. also fell apart. Breaks in continuity for physical crusting is evident.					
B	Wildlife Habitat			X		
Comments:	fair pronghorn					
B	Wildlife Populations			X		
Comments:	No LPC habitat-fair quail habitat-ave. deer and pronghorn					
B	Special Status Species Habitat					X
Comments:	Not potential LPC or sand dune lizard habitat-					
B	Special Status Species Populations					X
Comments:	Not LPC habitat-					

### 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	2	4	4
H	Hydrologic	0	0	2	5	4
B	Biotic	1	0	6	1	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		0	2	8
Hydrologic		0	2	9
Biotic	Grass species in F/S groups are missing with only threeawn, mesquite, snakeweed and yucca dominating. Biotics are marginal on this site and should be evaluated rather closely.	1	6	6

Site Notes: Livestock had grazed threeawn to approx. 4-6" stubble height. -yucca, mesquite, snakeweed-dominate site for invasive plants threeawn-grass species is the primary. No bluestem or gramas on this site. Biotics are marginal here. Invasive Plants must be monitored here.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-BULL-D144

Legal Land Desc	NWNE 19 0110S 0300E Meridian 23	Acreage	4
Ecosite	042CY030NM LIMY SD-3	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	ARTHUN/MOE	Observation Date	01/19/2006
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Ja	Soil Taxon Name	JAL
Texture Class	NM666 FSL	Soil Phase	JAL
Texture Modifier	NM666 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
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:						
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:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups				X	
Comments:		Only minor departure exists.				
B	Plant Mortality/Decadence					X

Comments:						
H B	Litter Amount					X
Comments:	70% is the current estimate.					
B	Annual Production				X	
Comments:	500 lbs/ac or kg/ha is the current estimate, which is 60-70% of the long-term average.					
B	Invasive Plants			X		
Comments:	Mesquite-scattered (5-10% cover).					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical along with some biological.					
B	Wildlife Habitat				X	
Comments:	Good open areas for pronghorn - potential LPC booming ground.					
B	Wildlife Populations				X	
Comments:	Good pronghorn					
B	Special Status Species Habitat					X
Comments:	not potential LPC or sand dune lizard habitat					
B	Special Status Species Populations					X
Comments:	not LPC habitat for nesting-					

### 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	7	3
H	Hydrologic	0	0	0	8	3
B	Biotic	0	0	1	6	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		0	0	10
Hydrologic		0	0	11
Biotic		0	1	12

Site Notes: Black grama and croton- threeawn is common but not dominant; overall-good shape. S. oak is close by but not on site. Interspace held together well.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-CRUMP-D138

Legal Land Desc	NWSW 36 0100S 0290E Meridian 23	Acreage	2700
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	NAVARRO/MOE/POST	Observation Date	01/27/2006
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	RPD	Soil Taxon Name	ROSWELL
Texture Class	NM644 FS	Soil Phase	ROSWELL- JALMAR
Texture Modifier	NM644 FINE SANDS,HILLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:			

#### Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to	Moderate	Slight to Moderate	None to

			Extreme			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 60%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	Presently filled with bluestem/buckwheat.					
H	Litter Movement				X	
Comments:	litter is mostly oak leaves					
S H B	Soil Surface Resistance to Erosion				X	
Comments:	Interspace fell apart/canopy held together.					
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:						
B	Functional/Structural Groups			X		
Comments:	Moderate deviations exist at most.					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Litter amount is now estimated at 30%.					
B	Annual Production				X	
Comments:	1000 lbs/ac or kg/ha.					
B	Invasive Plants			X		

Comments:	Some mesquite found scattered throughout.					
B	Reproductive Capability of Perennial Plants			X		
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical crust found.					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	Average deer and pronghorn pops.					
B	Special Status Species Habitat	X				
Comments:	No grass clumps or patches large enough to provide LPC nesting-cover					
B	Special Status Species Populations	X				
Comments:	No longer any active LPC leks in pasture, historically there were good numbers here.					

### 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	6	3
H	Hydrologic	0	0	1	7	3
B	Biotic	2	0	3	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	1	10
Biotic	Although the majority of biotics do meet, special status species habitat and populations in regards to LPC depart sharply from expected parameters.	2	3	8

Site Notes: Grasses found on site were sand dropseed, little bluestem, threeawn, panicums and leptochloa. No gramas; shinnery, yucca, mesquite and sand sage are shrubs present. LPC habitat and pops are virtually missing from historic range here.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-EAST MALMSTROM-D147

Legal Land Desc	NWNW 11 0120S 0290E Meridian 23	Acreage	1588
Ecosite	042CY005NM DEEP SAND SD-3	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	ARTHUN/MOE	Observation Date	01/26/2006
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Bf	Soil Taxon Name	BERINO
Texture Class	NM666 LFS	Soil Phase	BERINO- PINTURA
Texture Modifier	NM666 SANDY CLAY LOAM,ER		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
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:						

S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments: Blowouts are wind swept and filled with Aristida- no little bluestem-no bluestems.						
S H	Bare Ground		X			
Comments: Current estimate is 60-70%, exceeding upper end.						
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: Interspaces soil ped samples - intact						
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:						
B	Functional/Structural Groups			X		
Comments: Some moderate departure exists.						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments: Current estimate is now 30%.						
B	Annual Production			X		
Comments: 350-400 lbs/ac or kg/ha is the now current estimate.						
B	Invasive Plants		X			
Comments: Mesquite and snakeweed are common.						
B	Reproductive Capability of Perennial Plants				X	

Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	physical crust/ some bio					
B	Wildlife Habitat			X		
Comments:						
B	Wildlife Populations			X		
Comments:	Ave. deer pops.					
B	Special Status Species Habitat					X
Comments:	no nesting cover for LPC; only positive is shinnery oak.					
B	Special Status Species Populations					X
Comments:	No LPC detected.					

**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	2	4	3
H	Hydrologic	0	1	2	5	3
B	Biotic	0	1	4	4	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		1	2	7
Hydrologic		1	2	8
Biotic	Potential for LPC habitat to recover exists, but currently not conducive to nesting. The blowouts are swept clean with forbs and aristida only. The biotics	1	4	8

are marginal at best.			
Site Notes: This site could use some recovery time. Mesquite and snakeweed are common and are a threat to dominate. Shinnery oak is the only positive of note. Production is down with high amounts of bare ground.			

<b>RFOs Upland and Biotic Standard Assessment Summary Worksheet</b>			
<b>SITE 65053-HORSE-D146</b>			
Legal Land Desc	NENE 12 0110S 0290E Meridian 23	Acreage	0
Ecosite	042CY002NM SHALLOW SANDY SD-3	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	ARTHUN/MOE	Observation Date	01/19/2006
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Sm	Soil Taxon Name	SIMONA
Texture Class	NM666 FSL	Soil Phase	SIMONA
Texture Modifier	NM666 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	Livestock present with moderate utilization, leading to some compaction.		

<b>Part 2. Attributes and Indicators</b>						
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:	40-50 is the current estimate.					
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:	Interspace soil ped sample melted with under canopy holding together.					
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:	Livestock present.					
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is 50%.					
B	Annual Production			X		
Comments:	450 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants			X		
Comments:	Mesquite is scattered with potential to become common.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical with some bio.					

B	Wildlife Habitat			X		
Comments:	Too much mesquite for good pronghorn habitat.					
B	Wildlife Populations			X		
Comments:						
B	Special Status Species Habitat					X
Comments:	Not LPC or sand dune lizard habitat type.					
B	Special Status Species Populations					X
Comments:	Not LPC or lizard habitat type-					

### 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	2	4	4
H	Hydrologic	0	0	2	6	3
B	Biotic	0	0	6	2	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		0	2	8
Hydrologic		0	2	9
Biotic	Plant species fall short for wildlife habitat. Too much brush species are present, ie, mesquite, snakeweed; very little grama grass was found. Threeawn has become the dominant grass on site. Biotics must be monitored more intensely to assure they do not cross the threshold.	0	6	7

Site Notes: Aristida has become dominate on site. -gusa and mesquite-muhly- and some grama.

This area had too much threawn. Livestock present with moderate utilization. Interspace melted, canopy held together.

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

**SITE 65053-LITTLE ADAMS-D145**

Legal Land Desc	SWSE 13 0110S 0290E Meridian 23	Acreage	0
Ecosite	042CY005NM DEEP SAND SD-3	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	ARTHUN/MOE	Observation Date	01/19/2006
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	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	Some livestock use is indicated.		

**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:	Interspace soil ped sample broke up, canopy held together.					
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:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	60% is the current estimate.					
B	Annual Production				X	
Comments:	500 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants					X
Comments:	Mesquite is present but is a very minor component.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Physical -down in o.m.					

B	Wildlife Habitat			X		
Comments:						
B	Wildlife Populations				X	
Comments:	Ave. deer and pronghorn pops-					
B	Special Status Species Habitat					X
Comments:	no nesting cover for LPC.					
B	Special Status Species Populations					X
Comments:	No LPC present-					

### 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	1	6	4
B	Biotic	0	0	2	4	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		0	1	9
Hydrologic		0	1	10
Biotic		0	2	11

Site Notes: This site is indicating sand sage reduction. Some grazing is evident on pasture.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-NE-D139

Legal Land Desc	SWNW 15 0110S 0300E Meridian 23	Acreage	5401
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Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	NAVARRO/MOE/POST	Observation Date	06/01/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	Livestock use is moderate.		

## 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 30%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	little bluestem-grazed					
H	Litter Movement				X	

Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	interspace melted-canopy held together indicating increased o.m.					
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:						
B	Functional/Structural Groups		X			
Comments:						
B	Plant Mortality/Decadence					X
Comments:	some grazed little bluestem					
H B	Litter Amount				X	
Comments:	60% is the current estimate.					
B	Annual Production			X		
Comments:	950 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants			X		
Comments:	yucca scattered					
B	Reproductive Capability of Perennial Plants				X	
Comments:	only little bluestem-due to grazing					
S	Physical/Chemical/Biological Crusts				X	
Comments:	physical some bio					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	Average deer and pronghorn pops.					
B	Special Status Species Habitat	X				
Comments:	Virtually no residual cover suitable for LPC nesting. Bluestem clumps small and grazed.					
B	Special Status Species Populations	X				

Comments:	One bird on lek in 2006; much below historic numbers and this is a year when most populations in region are up. None were observed in 2007.
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### 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	6	3
H	Hydrologic	0	0	1	7	3
B	Biotic	2	1	3	5	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	1	10
Biotic	The majority of biotics do meet, however special status species habitat and populations are in less than satisfactory condition.	3	3	7

Site Notes: This site has increased threawn with little blustem in blowout areas- livestock use is light to conservative. Bluestem clumps are small and have been grazed, ie, no suitable cover is available for LPC.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-PIPELINE-D143

Legal Land Desc	NWNW 29 0110S 0300E Meridian 23	Acreage	591
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		

Observers	ARTHUN/MOE	Observation Date	01/19/2006
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
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:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		
Comments:	50-60% is the current estimate which approaches and just exceeds the upper end.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	Filled in with bluestem and sand sage.					
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to			X		

	Erosion					
Comments:	Resistance reduced throughout.					
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:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount					X
Comments:	50-60% is the current estimate.					
B	Annual Production			X		
Comments:	600-650 lbs/ac or kg/ha is the current estimate, which is approximately 1/2 of the potential (long-term average) of 1,219 lbs/ac or kg/ha.					
B	Invasive Plants				X	
Comments:	Some mesquite-5-10% cover; snakeweed is reduced..					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	Weak physical/bioi crust-very thin.					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	average deer and pronghorn populations-					
B	Special Status Species Habitat		X			
Comments:	Some bluestem, but not enough for LPC nesting cover-no oak. Not in LPC Core Area, but suitable habitat does exist.					
B	Special Status Species Populations	X				
Comments:	No leks in recent years-LPC population far below potential-					

### 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	2	5	3
H	Hydrologic	0	0	2	5	4
B	Biotic	1	1	2	5	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	2	8
Hydrologic		0	2	9
Biotic	Biotics meet, but should be monitored to assure they do not falter.	2	2	9

Site Notes: Interspace soil samples fell apart, but canopy held together. Little bluestem grazed with mesquite present but in reduced amounts. This site is not in the LPC Core Area, but the habitat is suitable for this species.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-RUND-D150

Legal Land Desc	SWNE 25 0120S 0290E Meridian 23	Acreage	4511
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	NAVARRO/MOE/POST	Observation Date	06/01/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL-

			JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	No disturbances at present.		

### 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 50%.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	filled with little bluestem					
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspace-melted; canopy-held together indicating higher o.m.					
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition				X	

	and Distribution Relative to Infiltration and Runoff					
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:	moderate departure- ScSc and Anha down					
B	Plant Mortality/Decadence					X
Comments:	Some decadent black grama.					
H B	Litter Amount					X
Comments:	50-60% is the current estimate.					
B	Annual Production				X	
Comments:	900 - 1000 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants			X		
Comments:	some yucca/mesquite -scattered.					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	physical crust observed					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	average deer and pronghorn					
B	Special Status Species Habitat		X			
Comments:	Some ungrazed bluestem but provides limited potential for LPC nesting, but patches small. Sand bluestem is limited here. No longer suitable for sand dune lizard habitat. Lack of shinnery due to past treatment.					
B	Special Status Species Populations	X				
Comments:	No leks or other signs of LPC on tract where they were formerly found.					
<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	1	6	3
H	Hydrologic	0	0	1	6	4
B	Biotic	1	1	3	5	3

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	1	10
Biotic		2	3	8

Site Notes: This site is in fair to good but very limited LPC and SDL habitat. Some decadence on black grama most likely due to recent dry conditions. Parts of pasture that contain shinnery lacks good nesting habitat.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-SE CULP-D140

Legal Land Desc	SWSW 35 0110S 0300E Meridian 23	Acreage	4388
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	NAVARRO/MOE/POST	Observation Date	06/01/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual	15.45	NOAA Growing Season	10.98

Precipitation		Precipitation	
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
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:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:						
S H	Bare Ground			X		
Comments:		Current estimate is 50%, which approaches the upper end of the range.				
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas			X		
Comments:		Dune country- veg throughout dunes-no scoured out dunes-				
H	Litter Movement				X	
Comments:		oak-wind blown				
S H B	Soil Surface Resistance to Erosion				X	
Comments:		Interspace soil ped sample fell apart; under the canopy remained intact.				
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:						

B	Functional/Structural Groups			X		
Comments:	some departure					
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	Current estimate is 30%.					
B	Annual Production			X		
Comments:	900 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants				X	
Comments:	Only yucca observed.					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:						
B	Wildlife Habitat				X	
Comments:	Good LPC winter & brood habitat (oak)- lacking good nesting-bluestems.					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat		X			
Comments:	Bluestems at limited nesting potential. Some clumps of residual grass for nesting, but small.					
B	Special Status Species Populations		X			
Comments:	Active lek in 2006 but overall density is low. This site contains the only known lek for allotment. Down from several years ago.					

### 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	3	4	3
H	Hydrologic	0	0	2	6	3
B	Biotic	0	2	2	6	3

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	3	7
Hydrologic		0	2	9
Biotic		2	2	9

Site Notes: The oak/grass ratio is 80% shinnery oak/20 grass and (70-30) in some places. Blow-outs are stable and active in some places. Their exists stable blow-outs w/higher concentrations of little bluestem. The active ones had little bluestem covering entire area. Production is higher for oak and little bluestem.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-SHINNERY-D148

Legal Land Desc	NWSW 17 0120S 0290E Meridian 23	Acreage	1199
Ecosite	042CY002NM SHALLOW SANDY SD-3	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	NAVARRO/MOE/POST	Observation Date	06/05/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Sm	Soil Taxon Name	SIMONA
Texture Class	NM666 FSL	Soil Phase	SIMONA
Texture Modifier	NM666 FINE SANDY LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	Livestock are currently utilizing this pasture at conservative levels.		

### 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:		interspace fell apart/canopy held together-				
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:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:		some departure due to moderate use; seed heads remain				
H B	Litter Amount				X	

Comments:	70% is the current estimate.					
B	Annual Production				X	
Comments:	400-450 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants			X		
Comments:	yuca, javelinabush and mesquite scattered					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	crust is trampled-physical and some bio					
B	Wildlife Habitat					X
Comments:	Decent pronghorn and deer habitat, excellent forb production (this isn't LPC habitat).					
B	Wildlife Populations				X	
Comments:	good deer, pronghorn and quail					
B	Special Status Species Habitat					X
Comments:	No potential for LPC-sand dune lizard-					
B	Special Status Species Populations					X
Comments:	This is not LPC or sand dune lizard habitat type.					

### 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	8	3
B	Biotic	0	0	1	6	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		0	0	10
Hydrologic		0	0	11
Biotic		0	1	12
Site Notes: This pasture is currently in use by livestock at a conservative rate. This site is high in forb growth with croton and buckwheat, ie, good diversity of forbs.				

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

#### SITE 65053-SO MALMSTROM-D151

Legal Land Desc	SWSW 35 0120S 0290E Meridian 23	Acreage	2328
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	NAVARRO/MOE/POST	Observation Date	06/05/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL-JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	No disturbances were recorded.		

### 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 50%.						
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: interspace-melted; canopy held together						
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:						
B	Functional/Structural Groups				X	
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments: 50% is the current estimate.						
B	Annual Production				X	
Comments: 1000 lbs/ac or kg/ha is the current estimate.						
B	Invasive Plants				X	
Comments: Very few mesquite encountered.						
B	Reproductive Capability of Perennial Plants					X

Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:	mostly physical					
B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:	Ave. deer and pronghorn pops.					
B	Special Status Species Habitat		X			
Comments:	Lack of nesting cover. Some residual dropseed, but not big clumps. Very little bluestem, ie, sand and little bluestem.					
B	Special Status Species Populations	X				
Comments:	No longer any active leks; population much below potential					

### 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	8	3
B	Biotic	1	1	0	8	3

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		2	0	11

Site Notes: This site is indicating only slight departure. Most attributes are falling within range, with exception special status species habitat and populations. Leks no longer active and nesting cover is missing with very limited amounts of bluestem. Biotic Standard does not meet for special status species.

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

**SITE 65053-SOUTH CULP-D141**

Legal Land Desc	NENE 6 0120S 0300E Meridian 23	Acreage	5046
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007060 MESCALERO		
Observers	NAVARRO/MOE/POST	Observation Date	06/01/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	Rn	Soil Taxon Name	ROSWELL
Texture Class	NM666 FS	Soil Phase	ROSWELL- JALMAR
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	Evidence of light to moderate use by livestock, but none observed at evaluation.		

**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:	55-60% is the current estimate which matches the long-term average.					
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments:	Little bluestem-covered surface.					
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:	Interspace melted-canopy held together.					
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:						
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	20-30% is now current estimate with shinnery leaves making up the majority.					
B	Annual Production			X		
Comments:	900 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants				X	
Comments:	No mesquite/snakeweed-only yucca-					
B	Reproductive Capability of Perennial Plants					X
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:						

B	Wildlife Habitat				X	
Comments:	good deer, pronghorn and quail habitat					
B	Wildlife Populations				X	
Comments:	good deer, pronghorn and fair for quail					
B	Special Status Species Habitat		X			
Comments:	Quite a bit of bluestem not too heavily grazed but residual clumps too small for nesting. Nesting cover not near potential.					
B	Special Status Species Populations	X				
Comments:	No leks found in recent years; historically leks were found here.					

### 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	2	5	3
H	Hydrologic	0	0	2	6	3
B	Biotic	1	1	3	5	3

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	2	8
Hydrologic		0	2	9
Biotic		2	3	8

Site Notes: \*-Both sand bluestem and little bluestem-some tall clumps but patches not large. This site is grazed light to moderate-still good but small clumps of little bluestem and seedheads. Shrubs in higher amounts are shinnery and sand sage. No livestock observed at time of evaluation.

### RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 65053-WEST MALMSTROM-D149			
Legal Land Desc	SWSW 28 0120S 0290E Meridian 23	Acreage	3486
Ecosite	070BY063NM DEEP SAND CP-2	Photo Taken	Y
Watershed	13060007070 LONG		
Observers	NAVARRO/MOE/POST	Observation Date	06/05/2007
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	FM	Soil Taxon Name	FASKIN
Texture Class	NM666 LFS	Soil Phase	FASKIN- MALSTROM
Texture Modifier	NM666 FINE SAND		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	15.45	NOAA Growing Season Precipitation	10.98
NOAA Avg Annual Precipitation	14.55	NOAA Avg Growing Season Precipitation	12.13
Disturbances and Animal Use:	no livestock		

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:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes				X	
Comments:						
S H	Bare Ground			X		
Comments: 50% is the current estimate.						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or					X

	Deposition Areas					
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:						
S H B	Compaction Layer					X
Comments:	Cattle present					
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence					X
Comments:						
H B	Litter Amount				X	
Comments:	40% is the current estimate.					
B	Annual Production			X		
Comments:	800-900 lbs/ac or kg/ha is the current estimate.					
B	Invasive Plants			X		
Comments:	mesquite - scattered					
B	Reproductive Capability of Perennial Plants					X
Comments:	grazed but seedheads still present					
S	Physical/Chemical/Biological Crusts				X	
Comments:	physical and bio but broken due to grazing					
B	Wildlife Habitat				X	
Comments:	fair quail habitat					
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X

Comments: No suitable habitat for LPC or SDL-no residual grass. It is questionable if this site will ever have appropriate grass for LPC. Fair quail habitat.

B	Special Status Species Populations					X
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Comments: No known LPC-

**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	1	7	3
B	Biotic	0	0	3	5	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		0	1	9
Hydrologic		0	1	10
Biotic		0	3	10

Site Notes: This site is not being used by livestock currently; snakeweed is very robust with large amounts of buckwheat. Needle and thread grass in large amounts was observed.

## Determination of Public Land (Rangeland) Health for 65053 CULP 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 local indicators were completed for this allotment. Based on these assessments, it is my determination that public land within Culp Ranch, allotment #65053, meets the (1) Upland Sites Standard. The (2) Biotic Communities Standard, including Native, Threatened, Endangered, and Special Status Species is met in the following pastures Big Adams, Bull (no public land), East Malmstrom, Horse (no public land), Little Adams (no public land), Shinnery, and West Malmstrom.

The (2) Biotic Communities Standard, including Native, Threatened, Endangered, and Special Status Species standard is not met in the following pastures Crump, Northeast, Pipeline, Rund, Southeast Culp, South Culp, and South Malmstrom.

There are no public land Riparian areas on this allotment, therefore this standard was not addressed.

The lack of LPC nesting habitat response despite improving weather conditions can be attributed to heavy utilization of grass by livestock during and after drought. This heavy use has resulted in virtually no suitable residual grass clumps of size or height to provide nesting cover. This is reflected by the on-site health assessments of these pastures and Robel data for this allotment. On the basis of this data, this allotment does not meet the Biotic Communities Standard for special status species. In these pastures, suitable grasses (bluestems) are present, but their growth and expansion has been suppressed by grazing. Lesser prairie chicken populations cannot recover until nesting habitat (suitable grasses) recovers.

/s/ Field Office Manager

A lack of LPC nesting habitat response despite improving weather conditions can be attributed to heavy utilization of grass by livestock during and after drought. This heavy use has resulted in virtually no suitable residual grass clumps of size or height to provide nesting cover. This is reflected by the on-site health assessments of these pastures and Robel data for this allotment.

On the basis of these assessments and data, this allotment does not meet the Biotic Communities Standard for special status species. In these pastures, suitable grasses (bluestems) are present, but their growth and expansion has been suppressed by grazing. Lesser prairie chicken populations cannot recover until nesting habitat (suitable grasses) recovers.

/s/ EDDIE BATESON  
Assistant Field Manager

05/14/2008  
Date