

Determination of Public Land (Rangeland) Health for 64075 GUY CECIL CONKLIN

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 allotment #64075 GUY CECIL CONKLIN meets the Upland Sites standard and (2) Biotic Communities, including Native, Threatened, Endangered and Special Status Species standard. There is some concerns within the Big Pasture; the current trend plot location on the slopes of rock outcrops and shallow gravelly soils may not fully represent the rangeland health of the public lands in this pasture. A new study plot will be established within this pasture to better represent the conditions. There are no public land riparian areas on this allotment, therefore this standard was not addressed.

/s/ T. R. KREAGER
Assistant Field Manager

07/21/2004
Date

Standards of Public Land Health

Evaluation of 64075 GUY CECIL CONKLIN Allotment [12/31/2003]

The Roswell Field Office conducted rangeland health assessments at two (2) study sites within the Guy Cecil Conklin Allotment #64075. 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
64075-BIG PASTURE- E105 (*)	X	*		X	*		N/A		
64075-FARM- E106 (*)	X			X			N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for the public land on the Guy Cecil Conklin allotment #64075. Ten of these assessed soil site stability, 11 hydrologic function and 13 biotic integrity. These qualitative assessments in conjunction with quantitative information gathered from previous data collected on 2 trend plot locations within the allotment were utilized to make rangeland health determinations. Quantitative evaluations are performed by the Roswell Field Office, which include some or all of the following: ground and vegetative cover and composition, production, frequency and ecological condition. These collections which were initiated in the late 1970's/early 80's, are scheduled and conducted approximately every 5 years.

The dry condition occurring over the last several years has impacted this allotment. This allotment is situated in northern Eddy county as one of the southernmost areas administered by the Roswell Field Office.

The Big Pasture site encompasses 748 acres/312 hectares of public land on very steep slopes with a Torriorthents soil phase with creosote (*Larrea tridentata*) common and more undulating areas of Sotim soil with mesquite (*Prosopis glandulosa*) as the major shrub component. This High Plains escarpment area also includes rock outcrops on the upper reaches and is classified as SD-3 Gravelly at and around the vicinity of the study site with creosote and catclaw mimosa (*Acacia* spp.) representing the major shrub components there. However the majority of the pasture includes some sandier areas with mesquite to the east and south and is mapped as SD-3 Sandy. Chihuahuan Desert influences are

apparent here as the northern strip of this desert surrounds this ecological site. A majority of indicators assessed exhibited moderate departures from the ecological site description or reference area. Soil and hydrologic attributes; rills, water flow patterns, pedestals and/or terracettes, bareground, gullies, litter movement, wind-scoured blowouts, soil surface resistance to erosion, soil surface loss or degradation, plant community composition and distribution relative to infiltration and runoff, compaction layer and litter amount ranged in ratings from Slight to Moderate to Moderate to Moderate to Extreme.

Rill formation is slightly active and on exposed slopes. The slope influence is obvious and rates rills and water flow patterns Moderate with some instability and deposition. Pedestals and terracettes rate Moderate with occasional terracettes. Pedestals are in flow paths and interspaces. The bareground rates Moderate as estimates are in the 60-70% range, which exceeds the long-term average of 46% and the Ecological Site Description (ESD) of 40-60%. The long-term average for rock cover, both large and small combined is approximately 27%. Rock cover must be factored into the readings as this parameter is site specific in nature. There is some gullying adjacent to and crossing the roads with some headcutting occurring. Gullies rate at Moderate with some indications of active erosion with occasional headcuts and vegetation intermittent. Litter movement rates at Moderate as litter is primarily in scattered concentrations next to shrubs and rocks. Soil surface resistance to erosion rates Slight to Moderate as resistance is reduced throughout the site as has organic matter. Due to soil loss the horizon has been seriously compromised, and the organic matter content here has been reduced as well. This indicator, soil surface loss or degradation rates Moderate. Plant community composition and distribution relative to infiltration and runoff rates Moderate. Plant cover changes from grassland to shrubland have adversely affected infiltration over time. The potential for runoff is higher here.

Functional/structural groups rate at Moderate. The ESD indicates black grama (*Bouteloua eriopoda*), sideoats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*) and bush muhly (*Muhlenbergia porteri*) should be present. The shrub component has replaced most of these species. Increasers like threeawn (*Aristida* spp.) and fluffgrass (*Dasyochloa pulchella*) have taken over in those areas historically dominated by the former. Long-term datum indicates that the decreasers have been gradually replaced. Creosote and ratany (*Krameria* spp.) along with catclaw have become the dominant groups with mesquite at the lower reaches. Litter amount rates Moderate as percent litter falls in the bottom end of the range expected, which is now estimated at 5%. Annual production rates Moderate with only 150 lbs/ac or kg/ha has been estimated. This shallow site historically indicates 390 lbs/ac or kg/ha as the long-term average. The site usually doesn't produce very much forage from year to year. Approximately only 1/3 of the amount expected is present. Invasive plants rates Moderate to Extreme as creosote and acacia are common throughout and encroaching with mesquite on the more sandy areas. Reproductive capability of perennial plants rates Slight to Moderate. The capability to reproduce by seed and tillers has been limited mainly due to the lack of stolon or seed formation. This suggests that the mulch layer may be lacking in some areas, which is conducive to germination of propogules. There is a slight physical crusting but is a very minor component. The rock

and gravel cover does however have a capacity to retain water, whenever the continuity of the crusts is broken. This indicator rates Slight to Moderate.

Farm Pasture, a SD-3 loamy ecological site, with an acreage of 869/362 hectares of public land, rated a majority of the indicators in the Slight to Moderate category. This lowland site is comprised of a Pima soil phase occurring on floodplains of narrow drainageways. The trend plot site is located adjacent to an irrigated field so as the influences are evident with one of the transects intersecting a tobosa (*Pleuraphis mutica*) swale. However there is slight active pedestaling on burrograss (*Scleropogon brevifolius*) and rocks on the upland side. This results in a rating of Moderate for pedestals and/or terracettes. The percent bareground approaches the upper end of the expected range which now is estimated at 60%. This reading slightly exceeds the ESD and long-term datum of 50% and currently rates at Moderate. Soil surface resistance to erosion rates at Moderate. Resistance to erosion is reduced and there is some ease of melting using the soil site stability test. Of note also is the structural/functional groups. Despite the absence of grama (*Bouteloua* spp.) grasses, the site exhibits some ground cover by the abundance of burrograss. No forbs can be seen at this time, which may be of concern for wildlife. This indicator rates Moderate, as vegetative diversity is lacking at this time to warrant possible lower ecological condition scores. (See site notes for details).

Litter amount rates Moderate to Extreme as percent litter now estimated at less than 10% falls in the bottom end of the range expected and 1/2 of the long-term average. Burrowing animals have undoubtedly impacted this hydrologic and biological attribute, along with less than adequate growing conditions. Annual production rates Moderate. Long-term datum averages 460 lbs/ac or kg/ha. At present 1/2 can be observed. Invasive plants rates Moderate to Extreme as prickly pear (*Opuntia* spp.) is common throughout. All other indicators rate Slight to Moderate to None to Slight.

Wildlife - Evaluation of the integrity of the biotic community considered several indicators as attribute indices for the area 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, as discussed above. In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation.

Big Pasture - Specifically, three biotic indicators fell within the Moderate rating, functional/structural groups and annual production. Considering present climate regimes, the latter two indicators can be expected to fall within the normal range of variability. One biotic factor rated as Moderate to Extreme, invasive plants, and its subsequent effect on other indicators, such as plant community composition and distribution relative to infiltration and runoff. As the area of interest falls within an ecotone between the Chihuahuan desert and grasslands biome, desert shrub components can be expected in the area and would increase with declining range site conditions and overall drying conditions over time.

Wildlife Habitat and Population indicators rate Slight to Moderate, primarily for desert mule deer (*Odocoileus hemionus*) and upland game birds, and a variety of non-game terrestrial species. The composition of vegetation reflects current climatic conditions, e.g., drought for the past several years, the area being within an ecotone of the Chihuahuan desert and grasslands, and current and past use. Range site production and cover of a variety of preferred plant species for wildlife, such as forbs and woody browse species, and the availability of seed for food and regeneration, is moderated by climate and land use. It should be noted that as habitat conditions change, i.e., shift to desert shrub grasslands, a shift in wildlife species and populations will occur, with those species preferring a more shrubby component increasing and those requiring a more open grassland aspect declining. Current observed wildlife habitat conditions indicate room for improvement for existing species utilizing the area and an increase of those terrestrial species that may have once inhabited a more desert grassland aspect of the area. Improvement include increasing ground cover, decreasing erosion, and reducing the amount of roads in the area for wildlife and rangeland benefit, thereby reversing the static to downward trend in range condition. With respect to Special Status Species, none are known to occur in the area of interest at this time and the Habitat and Population indicators are, therefore, rated None to Slight.

Farm Pasture - Specifically, two biotic indicators fell within the Moderate to Extreme rating, litter amount and invasive plants. Two other biotic factor rated as Moderate, Functional/Structural Groups and Annual Production. Considering present climate regimes, litter amount and annual production can be expected to fall within the normal range of variability. Invasive plants and Functional/Structural Groups are interrelated with an increase in one resulting a decrease in the other due to some factors, including land use and climatic conditions. The range site has the potential to improve with more favorable climatic conditions, wetter periods coupled with proper land use. In addition to the standard worksheet biotic factors, four specific wildlife indicators and descriptors are included in this evaluation.

Wildlife Habitat and Population indicators rate Slight to Moderate, primarily for pronghorn antelope and a variety of non-game terrestrial species, including raptor species that may utilize the area due to adjacent habitat features such as Cottonwood Draw and ag fields. The composition of vegetation reflects current climatic conditions, e.g., drought for the past several years. Range site production and cover of a variety of preferred plant species for wildlife, such as forbs and woody browse species, and the availability of seed for food and regeneration, is moderated by climate and land use. Current observed wildlife populations reflect habitat condition. With respect to Special Status Species, none are known to occur in the area of interest at this time and the Habitat and Population indicators are, therefore, rated None to Slight.

Hydrology - Big pasture - The rills indicator rated as moderate. Active rill formation is occurring on upslope and exposed areas. The water flow patterns indicator rated as moderate. Erosion is occurring with some instability and deposition. The pedestal indicator rated as moderate. The recent dry conditions in combination with wind and water erosion has possibly decreased the amount of plant cover infiltration into the soil

which may have increased the amount of pedestaling of plants and rocks. The bareground indicator rated as moderate. The amount of bareground has possibly increased due to recent dry conditions and also wind and water erosion processes. The gullies indicator rated moderate with active erosion, head cutting, and gully formation taking place. The increase in gullies has occurred because vegetation is very sparse and intermittent on slopes. The lack of vegetation has decreased infiltration and increased runoff. The litter movement indicator rated in the moderate category. The litter is displaced in scattered concentrations. The decrease in litter movement suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced and litter movement. Soil surface resistance to erosion rated in the slight to moderate category, with reduction of organic matter throughout the site. The soil surface loss or degradation has rated out as moderate. The recent dry conditions, decrease in the strength of physical crusts and or absence of soil crusts, wind velocity, surface dryness, the decreased amount of surface plant cover and reduction of organic matter has possibly increased soil surface loss to degradation. The plant community composition and distribution relative to infiltration and runoff rated as moderate. The recent dry conditions or drought conditions have possibly increased the amount of conversion of grassland to shrubland which has reduced infiltration and increased runoff. The increase of all species and class would help increase water infiltration and decrease runoff. The litter amount rated in the slight to moderate category. The decrease in litter amount suggests that the dry conditions have had a negative affect on the growing conditions which decreases the amount of litter that is produced. Additionally, the decrease in litter amount can have the effect of increasing the amount of bare soil. All other indicators rated as none to slight or slight to moderate. Sand and gravel deposits of Quaternary terrace gravel deposits and sand, gravel, and mudstone of the Gatuna Formation outcrop in the area.

It is the professional opinion of the Assessment Team that the public land within the Guy Cecil Conklin allotment meets the Upland and Biotic Standards. The Big Pasture, however, warrants a more critical evaluation as several indicators with soil, hydrologic and biotic attributes show Moderate departure from the ESD, causing concern for the Upland and Biotic standards. See recommendations for specific information regarding this ecological site.

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

- Litter Amount
- Invasive Plants

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

Recommendations: The Big Pasture is of concern for the Upland and Biotic standards. This highly erodible site on the higher slopes will further degrade, especially if violent thunderstorms impact the ground. There is risk of accelerated erosion as evidenced by the

amounts of sediment observed on the road. However the major acreage for this pasture is in the SD-3 sandy ecological site. Here the presence of mesquite is what earmarks this area. The only feasible recommendation at this time is to defer the gravelly outcrop area of the pasture from livestock use for at least 1 growing season until climatic conditions improve and allow this site to recover. The sandier parts of this pasture remain in position to continue watershed protection. If the grass component returns to the higher elevations it will take ideal conditions. Any method of brush control would only denude the already vegetatively sparse slopes and speed up the erosion rates by wind and water. The already tap rooting shrub component and the lack of fibrous rooting grass plants is of immediate concern. More frequent monitoring is necessary to insure that this site remains protected and that the pasture fences are fully functional for both the sandy and rocky ecological sites.

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64075-BIG PASTURE-E105

Legal Land Desc	NWSW 27 0150S 0230E Meridian 23	Acreage	748
Ecosite	042CY001NM GRAVELLY SD-3	Photo Taken	Y
Watershed	13060007110 COTTONWOOD-WALNUT		
Observers	NAVARRO/BAGGAO	Observation Date	12/31/2003
County Soil Survey	NM666 CHAVES SOUTH	Soil Var/Taxad	
Soil Map Unit	TOF	Soil Taxon Name	TORRIORTHENTS
Texture Class	NM666	Soil Phase	TORRIORTHENTS
Texture Modifier	NM666 GRAVELLY,COBBLY		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	9.32	NOAA Growing Season Precipitation	7
NOAA Avg Annual Precipitation	12.91	NOAA Avg Growing Season Precipitation	10.6
Disturbances and Animal Use:	The only disturbance at present is the road which is infrequently traveled. The wildlife are not impacting the site as would livestock. The wildlife population is not to where it would compromise this site any further. No livestock were observed at the time of the assessment.		

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 :	Rill formation especially on upslope and exposed areas.					
S H	Water Flow Patterns			X		

Comments :	Minor erosion is intermittent with some instability.					
S H	Pedestals and/or Terracettes			X		
Comments :	Very cobbly appearance. Rock, large and small exhibit active pedestalling.					
S H	Bare Ground			X		
Comments :	Now at 60-70%. Approaches the upper end of the range expected for the ESD and above the long-term average. There is a significant amount of rock of different sizes exposed and observed. Long-term average of rock cover is 27%.					
S H	Gullies			X		
Comments :	Moderate to common with active erosion. Some headcutting occurring especially on the road.					
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments :	Infrequent and few. This is not an area where blowouts are an issue.					
H	Litter Movement			X		
Comments :	Litter displaced and in scattered concentrations up against shrubs and larger rocks.					
S H B	Soil Surface Resistance to Erosion				X	
Comments :	Reduction in surface stability. Organic matter is lacking, but the physical crusts are holding together..					
S H B	Soil Surface Loss or Degradation			X		
Comments :	The "A" horizon has been compromised. Organic matter content is reduced. Plant interspaces show signs of degradation. Rock and gravel has migrated to the surface.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments :	This area was a former grassland. Northern portion of the Chihuahuan Desert. Shrubs are the norm for this area, but infiltration has been compromised.					
S H B	Compaction Layer				X	
Comments :	No livestock observed at this time, but there is 5-10% of surface which restricts water movement.					
B	Functional/Structural Groups			X		

Comments :	Creosote (<i>Larrea tridentata</i>), acacia (<i>Acacia</i> spp.) and Christmas cholla (<i>Opuntia leptocaulis</i>) are the dominant shrubs. Ratany (<i>Krameria</i> is also in abundance. There are no grama (<i>Bouteloua</i> spp.) or dropseed (<i>Sporobolus</i> spp.) present. Some skunkbush (<i>Rhus</i> spp.) can be seen. There is a reduction and/or relative dominance of some species, but the shrub component is common for this type of site. However the majority of the site encompasses a wider array of grass such as tobosa and burrograss.					
B	Plant Mortality/Decadence					X
Comments :	There is a minor amount of dead or decadent vegetation,					
H B	Litter Amount				X	
Comments :	Percent litter falls in the bottom range expected for the ESD and is slightly lower than the long-term average, but for a gravelly site, the litter is sparse.					
B	Annual Production			X		
Comments :	Annual production is less than half of potential and less than long-term average. Approximately 200 lbs/ac or kg/ha, including all shrubs. 50% of potential is observed.					
B	Invasive Plants		X			
Comments :	Creosote and acacia common throughout and encroaching slowly.					
B	Reproductive Capability of Perennial Plants				X	
Comments :	Capability is slightly limited mainly due to the absence of a mulch layer which may include topsoil and litter. Some of the tillering may be limited because of the lack of a microclimate for propogules to establish.					
S	Physical/Chemical/Biological Crusts				X	
Comments :	Physical crusts are evident, but continuity is broken and minor.					
B	Wildlife Habitat				X	
Comments :	Primarily hilly sandstone habitat with mixed desert shrub vegetation including creosote as Chihuahuan desert influence. Impacts are primarily roads in this small corner of the pasture. Gullies are prevalent. Cover habitat for big game and roads created in area from hunting.					
B	Wildlife Populations				X	
Comments :	No specific wildlife population information at this time. Wildlife species of concern in primarily desert mule deer (observed a small herd utilizing hills for cover) and upland game birds. A varied habitat for terrestrial non-game species.					
B	Special Status Species					X

	Habitat					
Comments :	None known to occur.					
B	Special Status Species Populations					X
Comments :	None known to occur.					

Part 3. Summary

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

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	6	4	0
H	Hydrologic	0	0	8	3	0
B	Biotic	0	1	3	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	Due to the absence of vegetation which should be holding the soil in place and the amount of rills and gullyiing, the upland standard is at risk. The steep slopes coupled with the recent dry conditions have augmented the erosion potential. With a major storm event, the runoff could be severe at this stage. The natural retrogression of the site could expedite the loss of soil and	0	6	4

	amount of rock would actually increase in ground cover readings. The influence is mainly from the rock-outcrop adjacent and uphill to the site. Downslope is in better position for site protection.			
Hydrologic	Infiltration of water into the soil is compromised. With a major storm event there is potential for runoff. There may not be ample time for the water to percolate through the soil. The number of indicators in the Moderate category is of concern. A more critical evaluation should be done in regards to the hydrologic attributes. This gravelly site with Torriorhents soil will continue to exhibit some erosion. However the erosion potential is lessened further into the sandier areas.	0	8	3
Biotic	Some of the biotic attributes are Moderate to Moderate to Extreme. There is very little evidence of the gravelly site being protected at this time. The vegetation, soil horizon, F/S groups, litter amount, production, and reproductive capability have all shown a varied degrees of departure from the ESD and Ecological Reference areas. More recent quantitaive information is needed in order to arrive at a clearer rating for the biotic and soil attributes. This site is expected to show a significant amount of shrub components. The grass cover however is not there. The site does not entirely represent the entire pasture. Most of the acreage is in the more SD-3 Sandy ecological site which may exhibit more grass cover and less shrubs. Creosote may be a problem.	1	3	9

Site Notes: This site is situated on some steeper slopes, therefore the opportunity for the area to recover may be different than that of a more flatter grassland aspect. If there is 100-200 lbs/ac or kg/ha at present, that value would be made up mostly of shrubs.. The amount of rock, large and small, appears high, but this is typical for a gravelly site, along with the absence of litter and high bareground percentage. Long-term average of rock cover would be not much different than at present. It would be feasible to assume that bareground and rock cover percentage would make up the majority of ground cover. This site is habitat to mule deer (*Odocoileus hemionus*), and other game animals. The forage base is reduced and there is potential for sediment runoff. There are no livestock present, and may only occassionally utilize these steeper slopes, and stick to the lower elevations. A number of attributes are rating in the Moderate range. Perhaps an immediate quantitative review is in order for this pasture, along with an overall allotment inspection

to observe to record the condition of the fences, roads and other improvements. The drier conditions occurring recently have hindered the soil and hydrologic components. The 2001 monitoring did show some increasers like threeawn (*Aristida* spp.) and fluffgrass (*Dasyochloa pulchella*), but were not observed at the time of assessment. Christmas cholla (*Opuntia leptocaulis*) and creosote (*Larrea tridentata*) are the major shrub species. Although the study site is in the steeper less productive rocky escarpment area, the majority of the pasture is not comprised of this particular type of soil or vegetation. The SD-3 sandy ecological description better fits the rest of the pasture. Tobosa swales with other grass species can be found just downslope from the study site. Mesquite is the primary species on the sandy area.

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 64075-FARM-E106

Legal Land Desc	NWSE 3 0160S 0240E Meridian 23	Acreage	869
Ecosite	042CY007NM LOAMY SD-3	Photo Taken	Y
Watershed	13060007110 COTTONWOOD-WALNUT		
Observers	NAVARRO/BAGGAO	Observation Date	12/31/2003
County Soil Survey	NM614 EDDY	Soil Var/Taxad	
Soil Map Unit	PM	Soil Taxon Name	PIMA
Texture Class	NM614 SIL	Soil Phase	PIMA
Texture Modifier	NM614 SILT LOAM		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	8.96	NOAA Growing Season Precipitation	7
NOAA Avg Annual Precipitation	12.62	NOAA Avg Growing Season Precipitation	10.6
Disturbances and Animal Use:	The only evidence of disturbance is burrowing rodents and other animals. The road intersects the transect lines next to the trend plot, which may have some impact.		

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 :	Almost to the point of pedestaled rocks.					
S H	Bare Ground			X		
Comments :	Now at 60%.					
S H	Gullies				X	
Comments :						
S	Wind-scoured, Blowouts, and/or Deposition Areas				X	
Comments :	No blowouts.					
H	Litter Movement				X	
Comments :						
S H B	Soil Surface Resistance to Erosion			X		
Comments :	Melting occurs quickly in the soil site stability test.					
S H B	Soil Surface Loss or Degradation				X	
Comments :	Missing organic matter.					
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments :	Burrograss (<i>Scleropogon brevifolius</i>) is assisting in some infiltration.					
S H B	Compaction Layer					X
Comments :						
B	Functional/Structural Groups			X		
Comments :	No forb production. Absence of grammas (<i>Bouteloua</i> spp.) Virtually no shrubs present with exception the prickly pear (<i>Opuntia</i> spp.).					
B	Plant Mortality/Decadence				X	
Comments :	Tobosa (<i>Pleuraphis mutica</i>) is stressed.					

H B	Litter Amount		X			
Comments :	Largely missing					
B	Annual Production			X		
Comments :	1/2 of the production can be estimated.					
B	Invasive Plants		X			
Comments :	Prickly pear (Opuntia spp.) is common.					
B	Reproductive Capability of Perennial Plants				X	
Comments :	Only slightly limited.					
S	Physical/Chemical/Biological Crusts				X	
Comments :	Evident physical crusts throughout but continuity is broken.					
B	Wildlife Habitat				X	
Comments :	Flat grassland habitat at study site with gently sloping terrain in majority of pasture draining into Cottonwood Creek. Creek is not riparian habitat. Developed agricultural fields in area. Habitat conditions in pasture are marginal for pronghorn antelope due to drought conditions.					
B	Wildlife Populations				X	
Comments :	No specific wildlife population information at this time. Primary species are pronghorn antelope and non-game terrestrial wildlife. Cottonwood Creek is a unique habitat feature for avian species following the creek bottom due to vegetative community different from surrounding uplands and agricultural fields.					
B	Special Status Species Habitat					X
Comments :	None known to occur.					
B	Special Status Species Populations					X
Comments :	None known to occur.					
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.

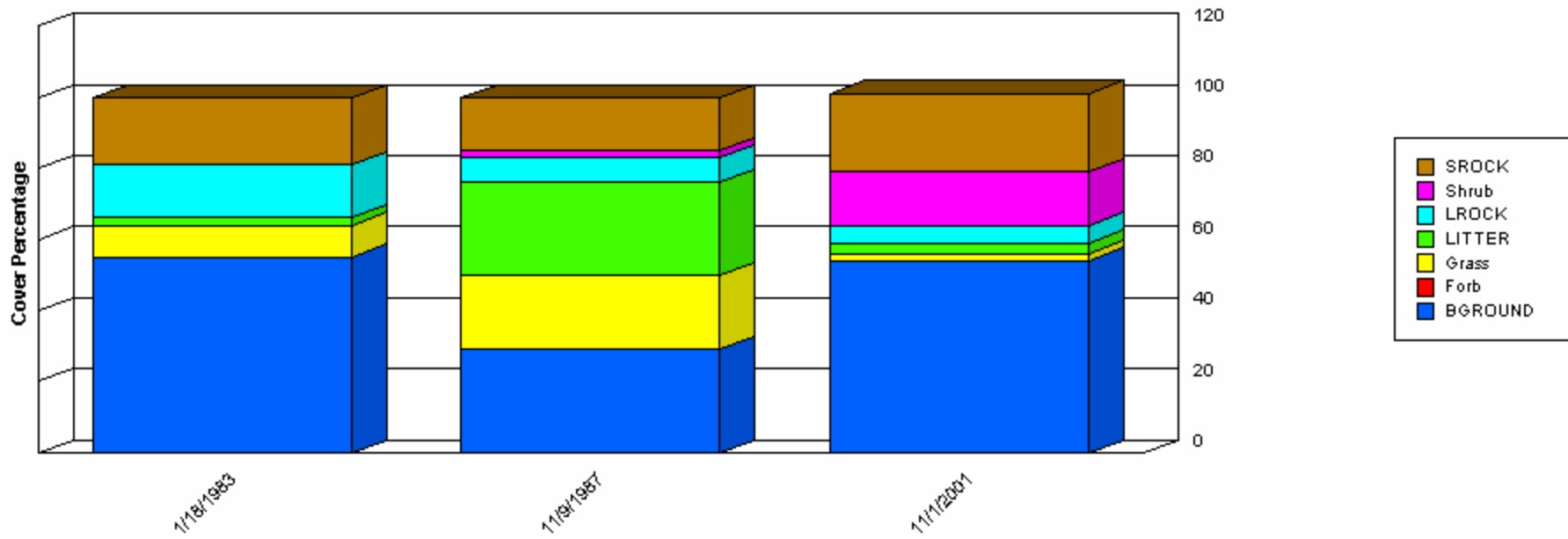
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	3	5	2
H	Hydrologic	0	1	3	5	2
B	Biotic	0	2	3	5	3

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	3	7
Hydrologic		1	3	7
Biotic		2	3	8

Site Notes: This site shows some signs of stress due to dry conditions recently occurring. Tobosa (*Pleuraphis mutica*) and burrograss (*Scleropogon brevifolius*) are showing effects due to lack of adequate precipitation. Tobosa dominates the bottom next to the irrigated area, but this isolated depressional swale covers a very limited area. It is the burrograss however that is dominating the site. No recent use by livestock can be observed at this time. The grama (*Bouteloua* spp.) grasses are missing, along with the dropseed (*Sporobolus* spp.) and threeawn (*Aristida* spp.). Present disturbances are primarily by burrowing animals and vehicle traffic intersecting the transects. An ecological condition score from transect data for 2001 is 51.32. At present it appears the lack of diversity amongst grass, forb and shrub species would not result in a condition score of good, but rather a score more representative of a mid-fair range.

Ground Cover Trends



	1/18/1983	11/9/1987	11/1/2001
BGROUND	55.00	29.00	54.00
Forb	0.00	0.00	0.00
Grass	9.00	21.00	2.00
LITTER	2.00	26.00	3.00
LROCK	15.00	7.00	5.00
Shrub	0.00	2.00	15.00
SROCK	19.00	15.00	22.00

	1/18/1983	11/9/1987	11/1/2001
Total	100.00	100.00	101.00

Report Parameters

SITE NAME LIKE 64075-BIG PASTURE-E105
ON/AFTER 10/01/1982
ON/BEFORE 09/30/2002

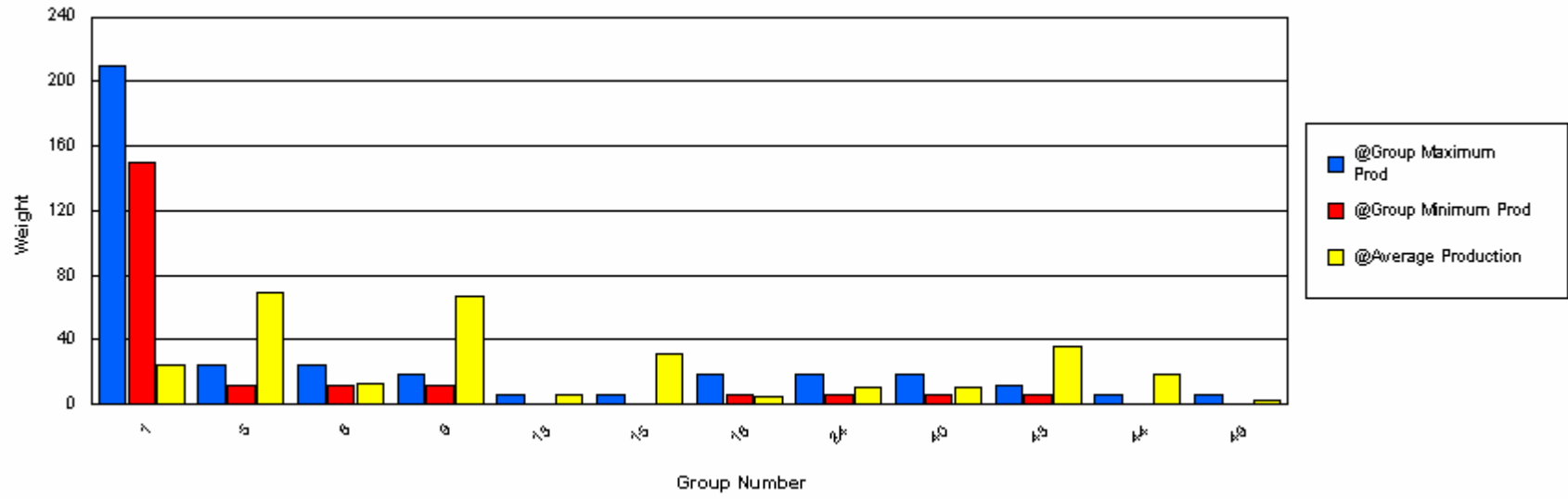
Functional / Structural Groups

Report Parameters

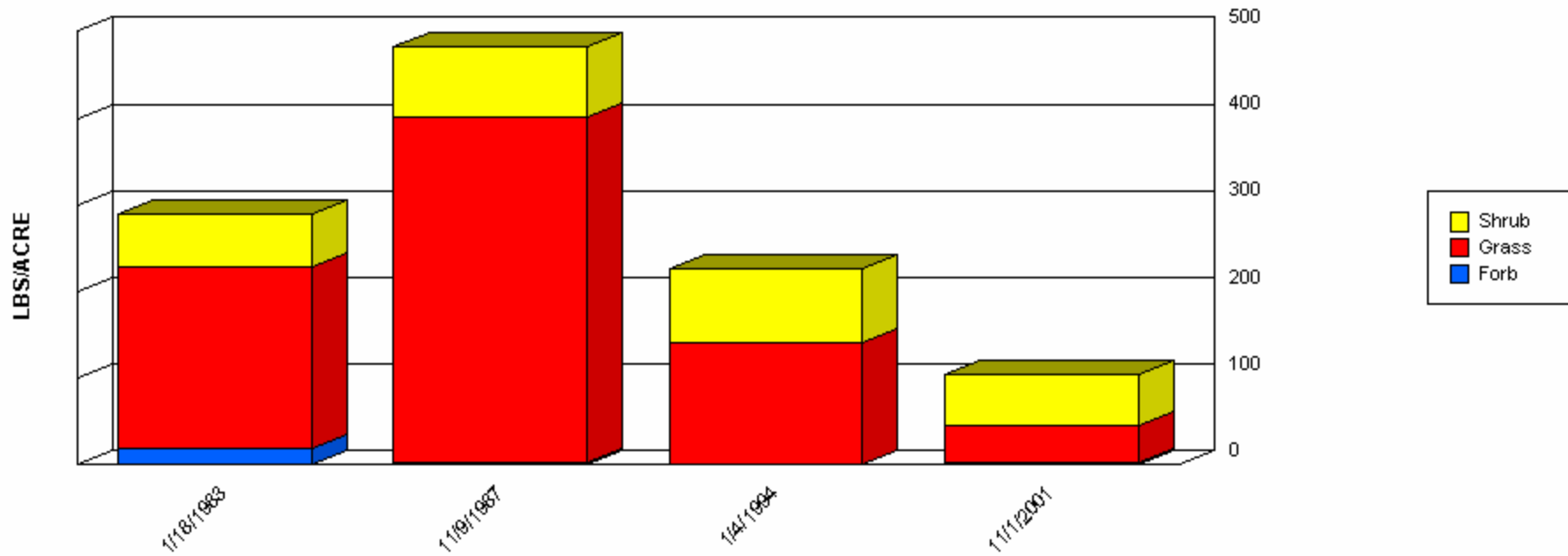
SITE NAME LIKE 64075-BIG PASTURE-E105
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2002
 MIN LBS TO GRAPH 1
 SELECTED ECOSITE 042CY001NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	150	210	5.87	53.00	24.05	20.69
5	Grass	ARIST	12	24	9.00	165.00	68.65	62.30
6	Grass	TRMU	12	24	0.64	28.00	12.21	10.11
9	Grass	SPCR	12	18	10.67	163.00	66.86	58.53
13	Grass	TRPI2	0	6	0.00	17.40	6.13	7.98
15	Grass	ERPU8	0	6	4.00	85.33	31.15	38.32
18	Grass	ENDE	6	18	0.00	9.63	4.82	4.82
24	Forb	LESQU	6	18	2.12	19.60	10.86	8.74
40	Shrub	LADI2	6	18	0.00	22.00	10.83	9.76
43	Shrub	KRLA	6	12	29.82	41.58	35.70	5.88
44	Shrub	GUSA2	0	6	0.00	39.00	18.65	15.15
48	Shrub	YUCCA	0	6	0.00	1.52	0.76	0.76
49	Shrub	OPUNT	0	6	0.00	7.00	2.82	3.01

Group Plant Type Species Low Wt Allowed High Wt Allowed Minimum Maximum Average STDEV



Production Lbs/Acre Trends

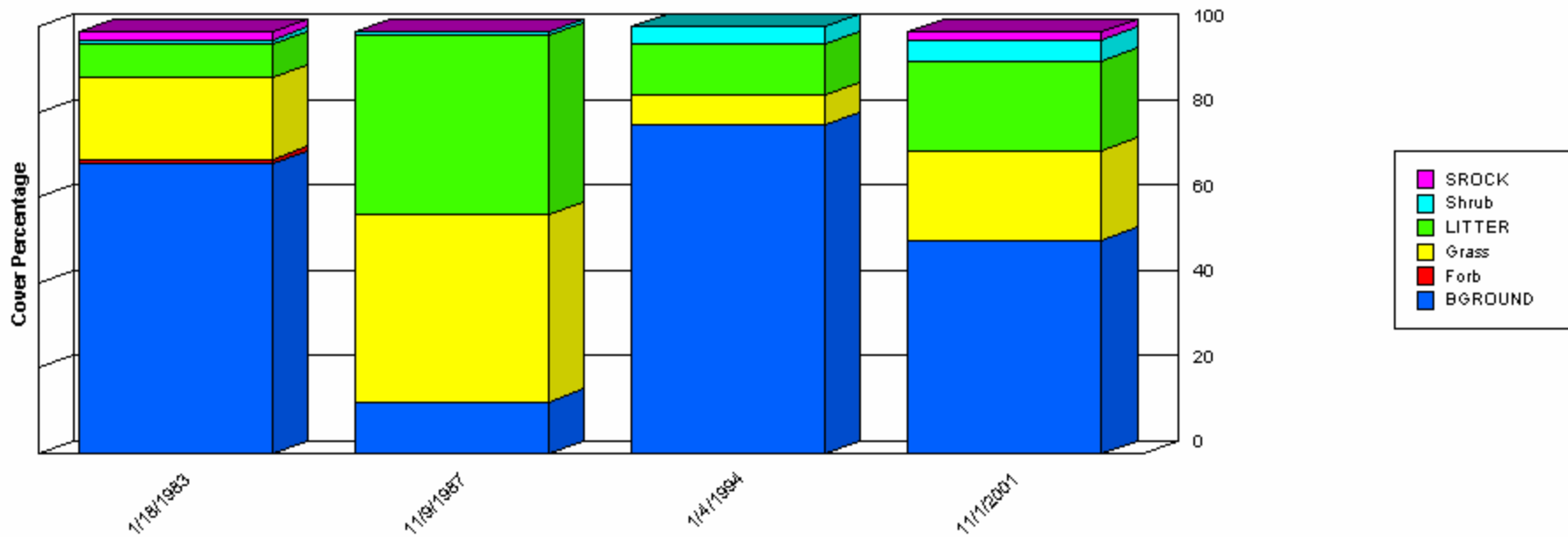


	1/18/1983	1/19/1987	1/4/1994	1/1/2001
Forb	20.00	2.00	0.00	2.00
Grass	208.00	399.00	141.00	44.00
Shrub	62.00	81.00	86.00	59.00
Total	290.00	482.00	227.00	105.00

Report Parameters

SITE NAME LIKE 64075-BIG PASTURE-E105
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2002

Ground Cover Trends



	1/18/1983	11/9/1987	1/4/1994	11/1/2001
BGROUND	68.00	12.00	77.00	50.00
Forb	1.00	0.00	0.00	0.00
Grass	19.00	44.00	7.00	21.00
LITTER	8.00	42.00	12.00	21.00
Shrub	1.00	1.00	4.00	5.00
SROCK	2.00	0.00	0.00	2.00
Total	99.00	99.00	100.00	99.00

Report Parameters

SITE NAME LIKE	64075-FARM-E106
ON/AFTER	10/01/1982
ON/BEFORE	09/30/2002

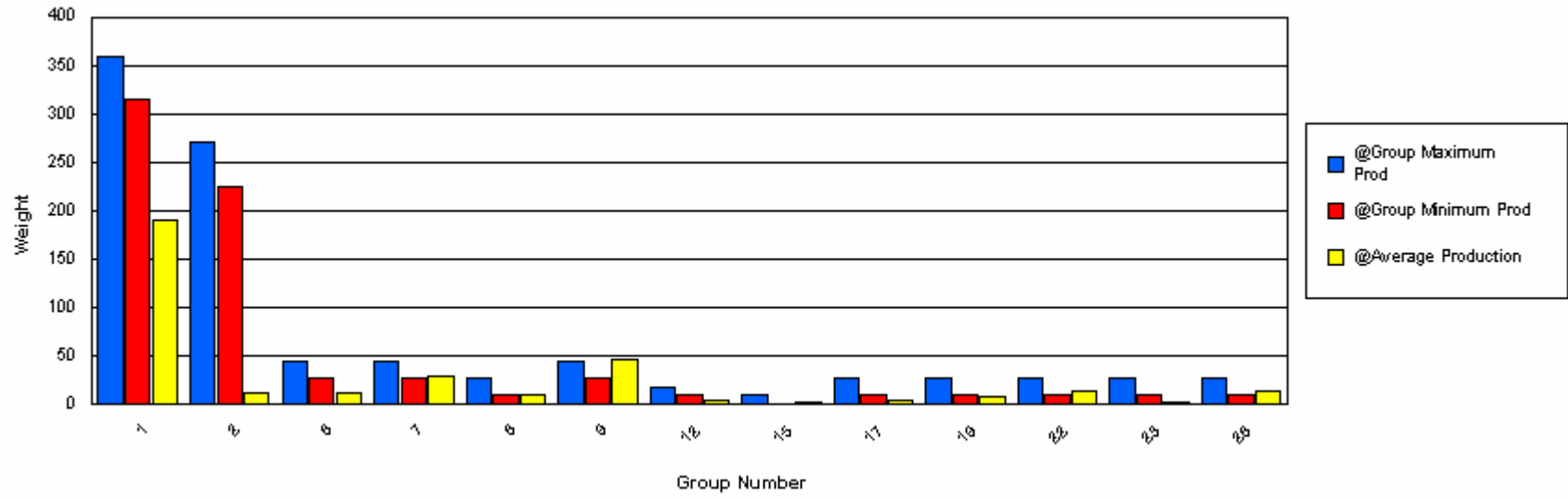
Functional / Structural Groups

Report Parameters

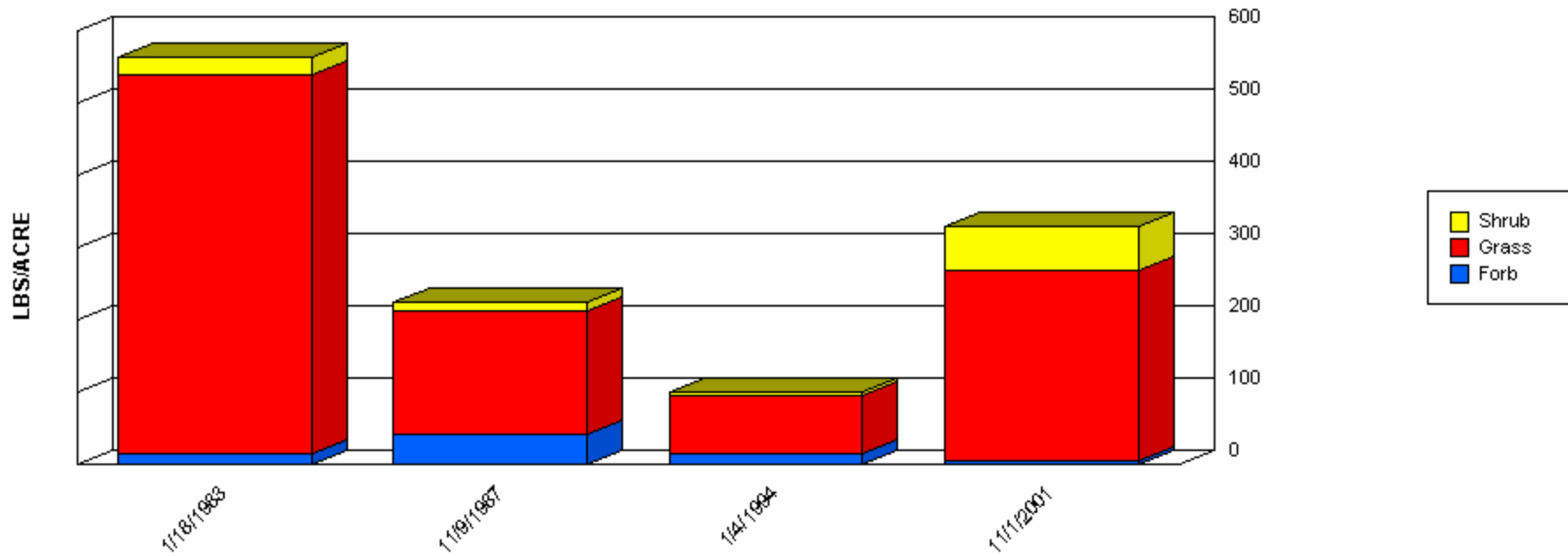
SITE NAME LIKE 64075-FARM-E106
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2002
 MIN LBS TO GRAPH 1
 SELECTED ECOSITE 042CY007NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	HIMU2	315	360	58.00	142.00	94.00	35.33
1	Grass	SCBR2	315	360	26.00	226.00	96.00	79.88
2	Grass	BOGR2	225	270	0.00	44.00	11.75	18.63
6	Grass	SPAI	27	45	0.00	23.00	11.50	11.50
7	Grass	ARIST	27	45	8.00	12.00	10.33	1.70
7	Grass	SPCR	27	45	8.00	40.00	18.67	15.08
8	Grass	PAOB	9	27	0.00	18.00	9.00	9.00
9	Grass	MUAR	27	45	3.00	69.00	26.75	25.12
9	Grass	MUAR2	27	45	0.00	25.00	11.33	10.34
9	Grass	MURE	27	45	0.00	17.00	8.50	8.50
12	Grass	PAHA	9	18	0.00	6.00	4.00	2.83
15	Grass	TRPI2	0	9	0.00	2.00	1.00	0.82
17	Grass	ERPU8	9	27	2.00	4.00	3.00	1.00
18	Forb	SPAN3	9	27	0.00	1.00	0.50	0.50
19	Forb	CROTO	9	27	0.00	11.00	5.25	3.96
19	Forb	LESQU	9	27	0.00	4.00	2.00	2.00
22	Forb	AAFF	9	27	10.00	14.00	12.00	2.00
22	Forb	COCO4	9	27	0.00	3.00	1.50	1.50
23	Forb	AMPS	9	27	0.00	3.00	1.50	1.50
26	Shrub	GUSA2	9	27	0.00	26.00	13.00	13.00

Group Plant Type Species Low Wt Allowed High Wt Allowed Minimum Maximum Average STDEV



Production Lbs/Acre Trends



	1/18/1983	1/19/1987	1/4/1994	1/1/2001
Forb	15.00	42.00	16.00	5.00
Grass	524.00	171.00	81.00	265.00
Shrub	26.00	13.00	3.00	61.00
Total	565.00	226.00	100.00	331.00

Report Parameters

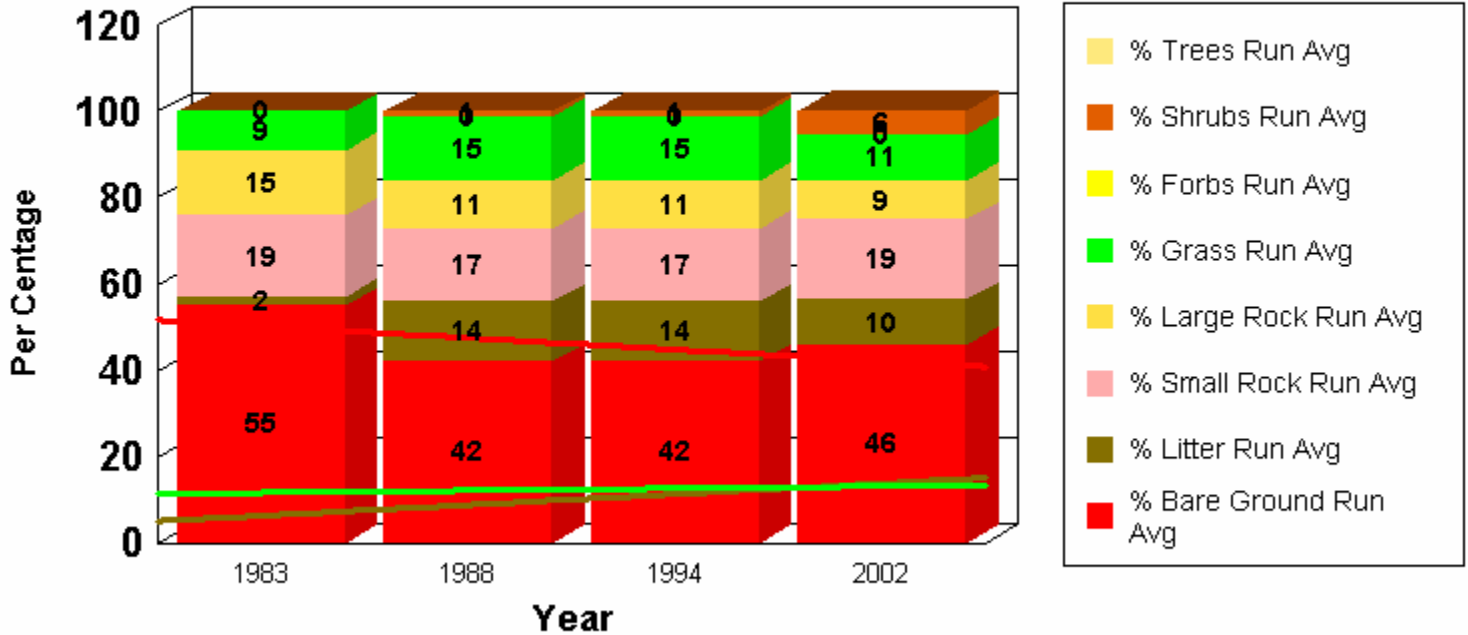
SITE NAME LIKE 64075-FARM-E106
 ON/AFTER 10/01/1982
 ON/BEFORE 09/30/2002

Location: Township: 0150S Range 0230E Section 27 QtrQtr: NWSW

Year	Bare Ground	Litter	Small Rock	Large Rock	Forbs	Grass	Shrubs	Trees	Running Average Bground	Running Average Litter	Running Average Srock	Running Average Lrock	Running Average Forb	Running Average Grass	Running Average Shrubs	Running Average Trees
1983	55.00	2.00	19.00	15.00	0	9.00	0.00		55.00	2.00	19.00	15.00	0	9.00	0.00	
1988	29.00	26.00	15.00	7.00	0	21.00	2.00		42.00	14.00	17.00	11.00	0	15.00	1.00	
1994									42.00	14.00	17.00	11.00	0	15.00	1.00	
2002	54.00	3.00	22.00	5.00	0	2.00	15.00		46.00	10.33	18.67	9.00	0	10.67	5.67	

Running Average Ground Cover Trends

With Trendlines

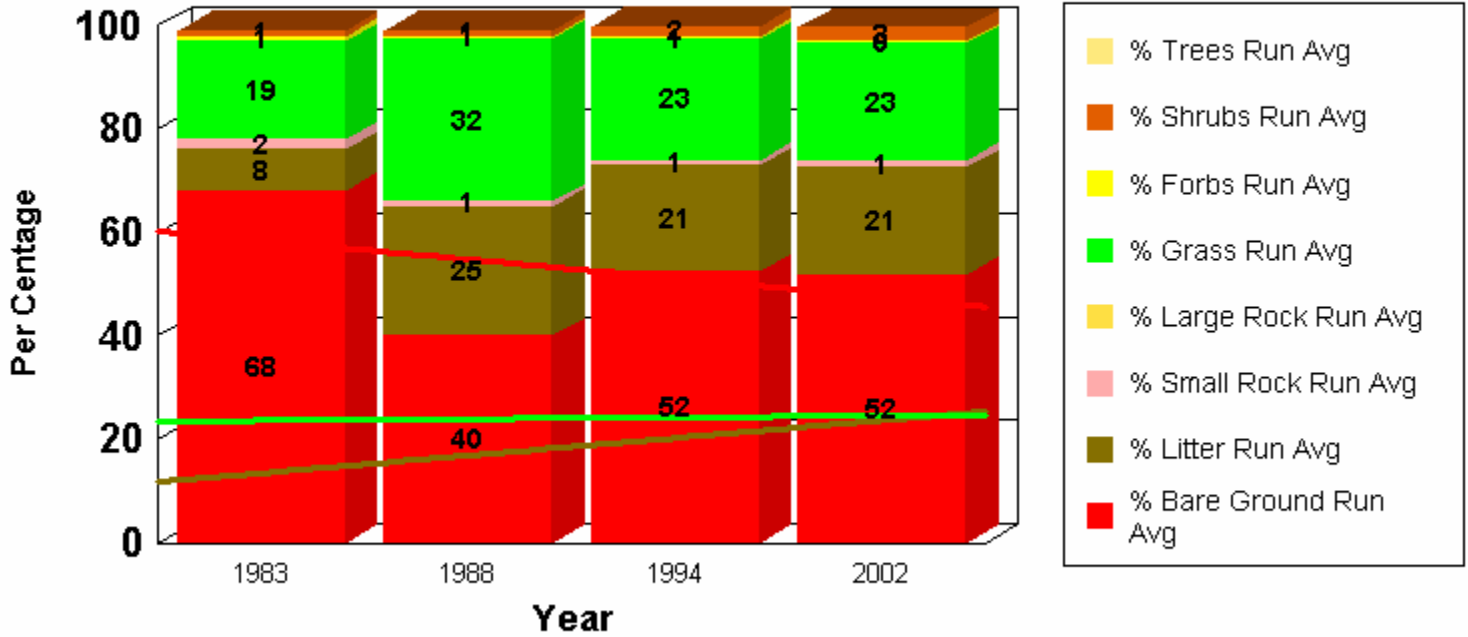


Location: Township: 0160S Range 0240E Section 03 QtrQtr: NWSE

Year	Bare Ground	Litter	Small Rock	Large Rock	Forbs	Grass	Shrubs	Trees	Running Average Bground	Running Average Litter	Running Average Srock	Running Average Lrock	Running Average Forb	Running Average Grass	Running Average Shrubs	Running Average Trees
1983	68.00	8.00	2.00		1.00	19.00	1.00		68.00	8.00	2.00		1.00	19.00	1.00	
1988	12.00	42.00	0.00		0	44.00	1.00		40.00	25.00	1.00		0.50	31.50	1.00	
1994	77.00	12.00				7.00	4.00		52.33	20.67	1.00		0.50	23.33	2.00	
2002	50.00	21.00	2.00		0	21.00	5.00		51.75	20.75	1.33		0.33	22.75	2.75	

Running Average Ground Cover Trends

With Trendlines



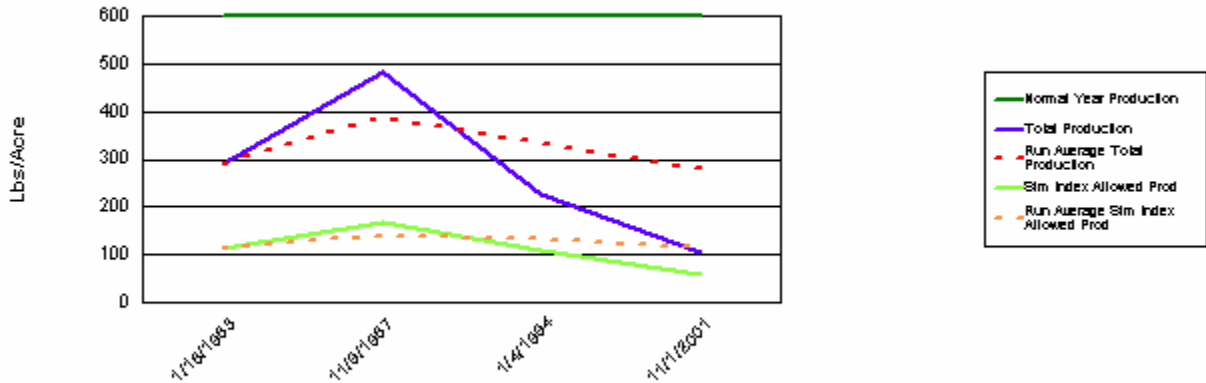
Production (lbs/ac) Data Trends

(Data Extracted From VMAP System)

VEGID: 626					Date Printed: 7/21/2004
Allot No. 64075	Allotment GUY CECIL CONKLIN	Ecosite ID 042CY001NM	Ecosite Name GRAVELLY SD-3	Site Name 64075-BIG PASTURE-E105	
Location: T. 0150S R. 0230E Sec. 27	QtrQt NWSW	UTM-N 3649554.251			
CHAVES	County, NM	UTM-E 533147.466			
Soil Sur No NM666	Soil Map Unit TOF	Soil Tax Name TORRIORTHENTS	Soil Association TORRIORTHENTS		

Date	Range Cond.	Similarity Index	Normal Year Production	Total Production	Running Average Production	Sim Index Allowed Production	Running Average Sim Index Allowed Production
01/18/1983	24.54	19.00	600	290.00	290.00	114.00	114.00
11/09/1987	31.00	27.83	600	482.00	386.00	167.00	140.50
01/04/1994	18.00	18.00	600	227.00	333.00	108.00	129.67
11/01/2001	29.46	20.00	600	105.00	276.00	60.00	112.25

Production Data For Study Site



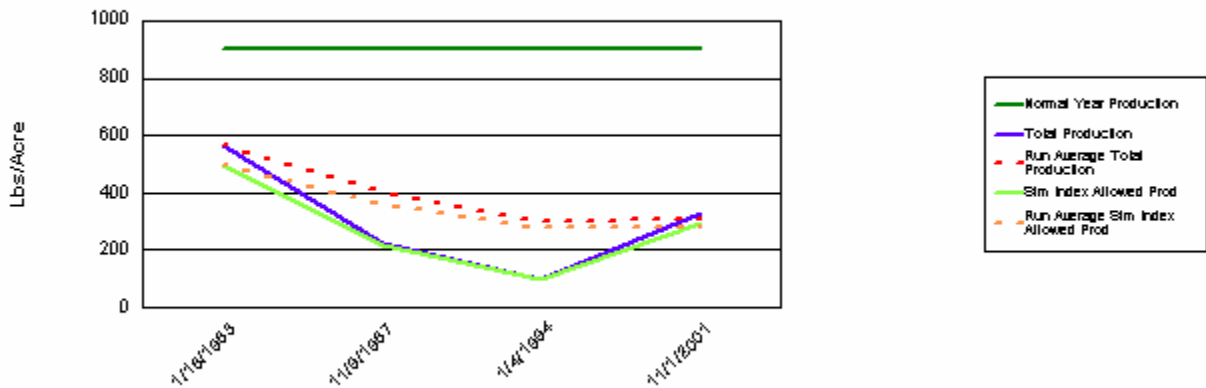
Production (lbs/ac) Data Trends

(Data Extracted From VMAP System)

VEGID: 627					Date Printed: 7/21/2004
Allot No. 64075	Allotment GUY CECIL CONKLIN	Ecosite ID 042CY007NM	Ecosite Name LOAMY SD-3	Site Name 64075-FARM-E106	
Location: T. 0160S	R. 0240E	Sec. 03	QtrQt NWSE	UTM-N 3646067.445	
CHAVES	County, NM			UTM-E 540206.357	
Soil Sur No NM614	Soil Map Unit PM	Soil Tax Name PIMA	Soil Association PIMA		

Date	Range Cond.	Similarity Index	Normal Year Production	Total Production	Running Average Production	Sim Index Allowed Production	Running Average Sim Index Allowed Production
01/18/1983	69.06	55.44	900	565.00	565.00	499.00	499.00
11/09/1987	65.00	24.44	900	226.00	395.50	220.00	359.50
01/04/1994	61.00	11.11	900	100.00	297.00	100.00	273.00
11/01/2001	51.32	33.00	900	331.00	305.50	297.00	279.00

Production Data For Study Site



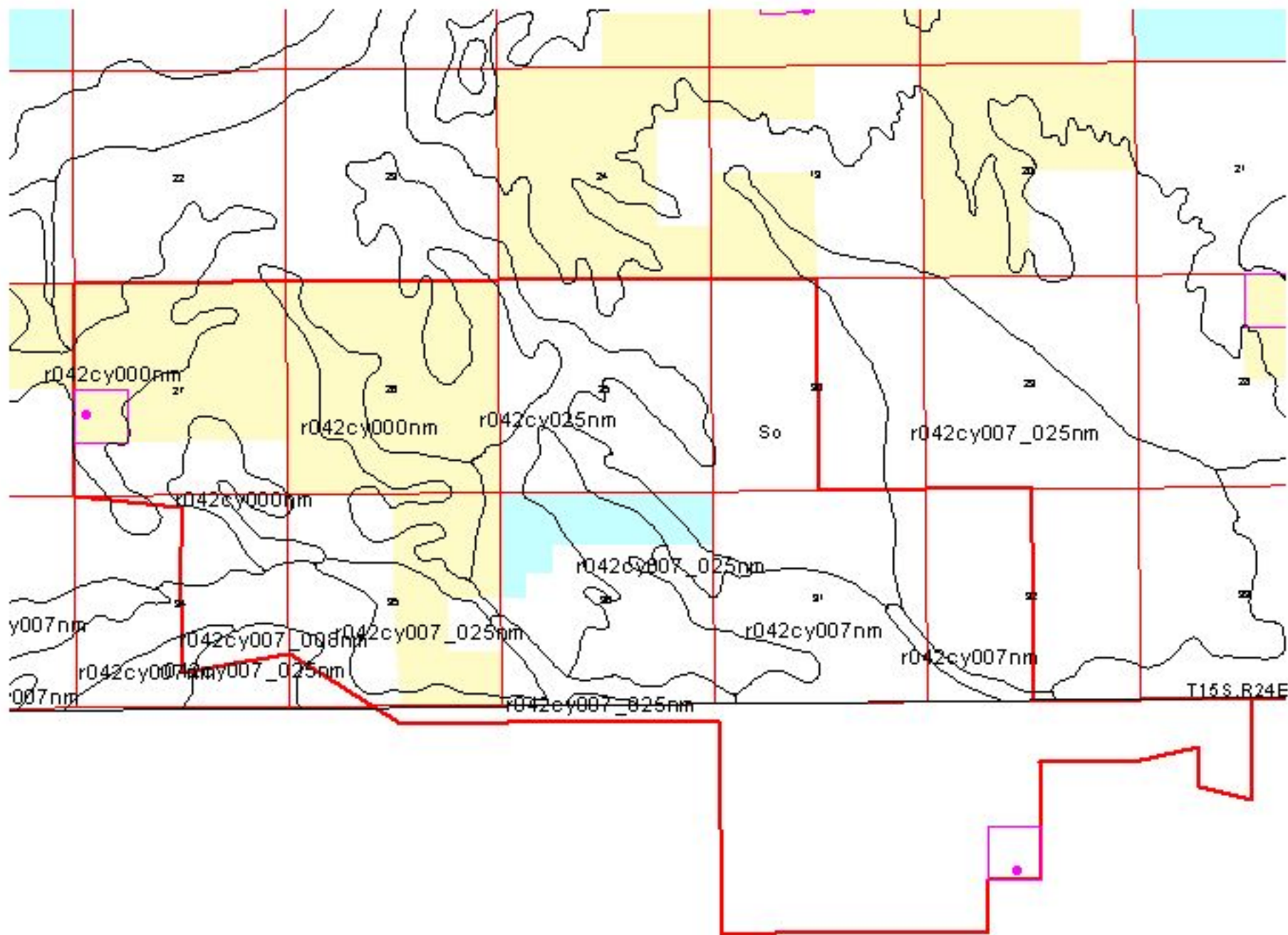


Rangeland Health Assessment Ecological Sites



Allotment 64075

T15S.R23E



T15S.R24E

0.5 0 0.5 Miles



Public



Study Plots



State



Private



Study Locations



Pasture Boundary



Ecological Sites



Allotment Boundary

Produced by the Roswell Field Office
GIS Intern on July 25, 2003.

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