UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R042XC004NM

Site Name: Sandy

Precipitation or Climate Zone: 10 to 13 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on plains, fans, or terraces between desert drainageways. Slopes are nearly level to gently undulating, ususlly less than 5 percent. Low, stabilized hummocks may occasionally occur. Direction of slope varies and is not significant. Elevations range from 2,842 to 4,500 feet.

Land Form:
1. Plain
2. Fan
3. Terraces

Aspect:
1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	2,842	4,500
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A

Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:
Negligible to Very low

CLIMATIC FEATURES

Narrative:

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest in January through June which rapidly dries out the soil during a critical period for cool season plant growth.

	Minimum	Maximum
Frost-free period (days):	180	221
Freeze-free period (days):	199	240
Mean annual precipitation (inches):	10.0	13.0

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.40	0.42	20.6	59.7
February	0.40	0.41	25.2	65.6
March	0.41	0.43	31.4	72.7
April	0.58	0.63	40.4	81.5
May	1.28	1.35	49.6	88.7
June	1.40	1.46	59.1	95.4
July	1.62	1.64	63.3	96.4
August	1.79	1.84	61.6	94.8
September	1.81	2.20	54.1	88.5
October	1.16	1.41	40.7	80.4
November	0.43	0.47	28.4	68.7
December	0.48	0.51	20.9	61.1

Climate Stations:

(1) NM0600, Artesia, NM - Period of record 1961 - 1990
(2) NM0992, Bitter Lakes WL Refuge, NM - Period of record 1961 - 1990
(3) NM1469, Carlsbad, NM - Period of record 1961 - 1990
(4) NM293792, Hagerman, NM - Period of record 1961 - 1990
(5) NM299563, Waste Isolation Plant, NM - Period of record 1961 - 1990
(2) NM4346, Jal, NM - Period of record 1961 - 1990

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced from water from wetlands or streams.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:
The soils of this site are deep to moderate deep and well drained. A few shallow soils are included. The surface layer textures are fine sandy loam, sandy loam, and a few loam, loamy fine sand, and fine sand. The underlying layers, at about 20 inches, are finer textured, and include fine sandy loam, loam, sandy clay loam, and some clay loam. Lime layers or grpsiferous caliche often occur at depths between 20 and 40 inches. These soils have moderately rapid to rapid permeability. Available water holding capacity is moderate to high.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. fine sandy loam
2. loamy
3. loamy fine sand

Surface Texture Modifier:

1. N/A
2.
3.

Subsurface Texture Group: N/A
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A
Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:		
Permeability Class:		
Depth (inches):		
Electrical Conductivity (mmhos/cm):		
Sodium Absorption Ratio:		
Soil Reaction (1:1 Water):		
Soil Reaction (0.1M CaCl2):		
Available Water Capacity (inches):		
Calcium Carbonate Equivalent (percent):		

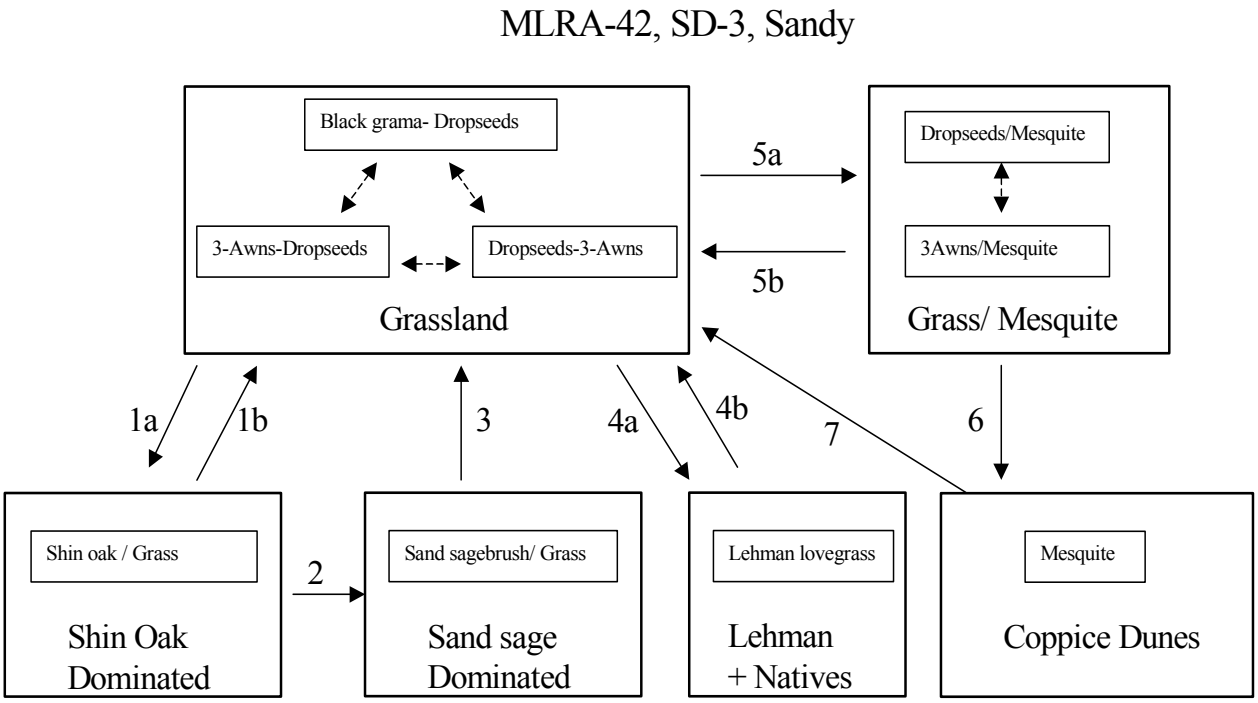
PLANT COMMUNITIES

Ecological Dynamics of the Site:

Overview

The Sandy site intergrades with the Loamy Sand and Deep Sand sites (SD-3). Sandy sites occur on plains, fans, or terraces between drainages and with slopes of less than five percent and soil textural changes around 20 inches. Surface textures at Sandy sites are usually sandy loams. Loamy Sand sites occur on upland plains between drainages but have loamy sand surface textures. Deep Sand sites occur on upland plains or in old basins but are distinguished by textural depths greater than 40 inches. The historic plant community of the Sandy site is dominated by black grama (Bouteloua eriopoda) and dropseeds (Sporobolus flexuosus, S. contractus, S. cryptandrus). Blue grama (B. gracilis) also occurs as a subdominant species. Perennial and annual forb abundance is distributed relative to precipitation occurrence. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama and other grass species' cover indicate a transition to states with a larger shrub component. Shinnery oak (Quercus havardii), sand sage, and honey mesquite (Prosopis glandulosa) can all increase in composition. Lehmann lovegrass (Eragrostis lehmanniana) also may occur as a result of invasion and competition among grass species. Heavy grazing intensity and/or drought are influential in decreasing grass cover and subsequently increasing shrub cover. Fire suppression further supports shrub cover increase and an advantage over grass species. However, brush and grazing management may restore grass species and reverse shrub or grass/shrub dominated states back toward the historic plant community.

Plant Communities and Transitional Pathways (diagram)



1a. Climate, fire suppression, competition, over grazing
1b. Brush control, Prescribed grazing

2.Brush control (insufficient chemical).

3. Brush control

4a. Invasion from seeded areas.
4b. Brush control reseed native species.

5a. Overgrazing, seed dispersal, lack of fire.
5b. Brush control, prescribed fire.

6.Severe loss of grass cover, wind erosion.

7. Brush control, seeding

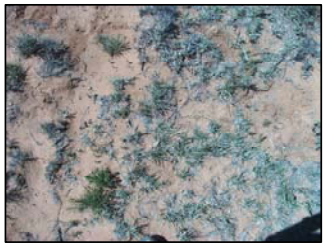
Plant Communities Photo Display & descriptive Diagnosis

MLRA 42; SD-3; Sandy

Grassland


•Black grama following mesquite removal
•Small mesquite plants reestablishing
•Mesquite seedlings occurring in low-medium densities

Grass/Shrub

•Mesquite is small and arborescent
•Mesquite and sand sage seedlings

Shrub-Dominated


•Sand sagebrush community with seedlings
•Sandy surface texture with forbs

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 Narrative Label: HCPC

Plant Community Narrative: State Containing Historic Plant Community

Grassland: The historic plant community is composed primarily of black grama, dropseeds, and a secondary component of blue grama. Black grama tends to dominate due to the predominance of sandy loam soils; however, dropseeds increase on more loamy soils. Perennial and annual forbs are common but their abundance and distribution are dependent on seasonal precipitation. Historical fire frequency is unknown but probably contributed to shrub reduction to the competitive advantage of grass species. Excessive grazing and drought are likely the dominant drivers that decrease black grama and increase dropseed and threeawn abundance within the historic plant community. Black grama has low seed viability, and therefore, reproduces vegetatively during the summer growing season. However, black grama growth is delayed one season after normal precipitation. Black grama is dormant for the remainder of the year; however, black grama retains nutritive value yearlong for grazing. In contrast, dropseeds have relatively abundant, viable seed production and can benefit from early spring as well as summer precipitation. Threeawns also respond to spring and summer moisture and tend to be the year's first palatable species. Threeawns and dropseeds, however, are not palatable during dormant periods, which extends grazing pressure to black grama. Moderate to heavy grazing reduces vegetative cover of black grama which increases its susceptibility to wind erosion and drought (Canfield 1939). Black grama is especially vulnerable to grazing during the summer growing season when stoloniferous growth and rooting occur. Black grama sustains short droughts through reduction of plant tufts which will subsequently merge with sufficient moisture. Prolonged drought or grazing concurrently under drought conditions can delay or impede recovery of black grama (Nelson 1934) and increase abundance of dropseeds, threeawns, and blue grama. Historical fire events may have benefited black grama, especially, frequent, light intensity/severity fires in conjunction with sufficient moisture to increase stolon production (McPherson 1995). Fires which were hot and severe, however, probably contributed to black grama mortality, more so in drought conditions.

Diagnosis: This state is a grassland dominated by black grama, dropseeds, and threeawns, with subdominant blue grama. Shrubs, such as sand sage and mesquite, are sparsely dispersed throughout the grassland. Forb populations are present and fluctuate with precipitation variability.

Ground Cover (Aveage Percent of Surface Area).

Grasses & Forbs	35 – 40
Bare ground	15 – 20
Surface cobble and stone	0
Litter (percent)	35 – 45
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

	Annual Production (lbs/ac)		
Plant Type	Low	RV	High
Grass/Grasslike	480	720	960
Forb	90	135	180
Tree/Shrub/Vine	30	45	60
Lichen			
Moss			
Microbiotic Crusts			
Totals	600	900	1,200

Plant Community Composition and Group Annual Production: Plant species are grouped by annual production **not** by functional groups.

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOER4	black grama	315	360
2	BOGR2	blue grama	45	90
3	MUPO2	bush muhly	27	45
4	SPCR	sand dropseed	90	135
4	SPCO4	spike dropseed		
4	SPFL2	mesa dropseed		
5	ARIST	threeawns spp.	27	45
6	SEVU2	plains bristlegrass	27	45
7	DICA8	Arizona cottontop	27	45
8	BOSA	silver bluestem	45	72
8	SCSC	little bluestem		
9	PAOB	vine mesquite	9	27
10	PLMU3	tobosa	9	27
11	2GP	other perennial grasses	9	27

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	YUCCA	yucca	9	45
13	MIACB	catclaw mimosa	9	27
14	ATCA2	fourwing saltbush	9	27
15	EPHED	ephedra	9	27
16	MIERX	javelinabush	9	27
17	GUSA2	broom shnakeweed	9	27
17	ARFI2	sand sagebrush		
18	2SHRUB	other shrubs	9	27

Plant Type – Forb

19	CROTO	croton	27	63
19	SPHAE	globemallow		
20	PACAL5	wooly groundsel	27	45
20	GRSQ	curlycup gumweed		
21	MEMU3	stickleaf	9	27
22	ERCI6	Arizona filaree	27	45
22	ERTE13	Texas stork's bill		
23	2FORB	other forbs	9	27

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: fall withchgrass, slim tridens, Almejita signalgrass, Indian ricegrass and fluffgrass.

Other shrubs include: pale wolfberry, lotewood condalia, tarbush, Apachepluce, and mesquite.

Other forbs include: plains tickseed, plains blackfoot, scorpionweed, nama, wooly guara, wooly dalea, spectaclepod mustard, bladderpod mustard, menodora, cutleaf haplopapis, prickly lettuce, lambsquarter, wooly Indianwheat and wild buckwheat.

Plant Growth Curves
Growth Curve ID NM2804
Growth Curve Name: HCPC
Growth Curve Description: SD-3 Sany - Warm season plant community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	1	3	4	10	10	25	30	12	5	0	0

ADDITIONAL STATES:

Shinnery Oak Dominated: This state is dominated by Shinnery oak with subdominant grass species from the historic plant community. Bare ground is a significant component in this state. Shinnery oak tends to be clumped in distribution in finer soil textures. Shinnery oak density increases (as well as dropseeds, threeawns, and blue grama) in coarse textured (e.g., Loamy Sand sites) and deeper, coarse textured (e.g., Deep Sand and Sandhills sites) soils. Shinnery oak predominates during periods of above average (i.e., 16 in.) precipitation during the months of July and August. Abundance and distribution also increases with disturbance, such as excessive grazing and fire, due to an aggressive rhizome system. Shinnery oak's extensive root system allows competitive exclusion of grasses and forbs. Brush control with herbicide treatments applied in the spring can reduce Shinnery oak (Herbel et al. 1979, Pettit 1986). In addition, repetitive seasons of goat browsing can also decrease Shinnery oak abundance. However, brush management should maintain shrub patches to prevent erosion and to provide wildlife cover and forage.

Diagnosis: This state represents a clumped distribution of Shinnery oak with patches of bare ground and subdominant grass species, such as black grama, dropseeds, threeawns, and blue grama. Shinnery oak density increases, as do dropseeds, threeawns, and blue grama, as Sandy site intergrades with Deep Sand and Sandhills sites.

Transition to Shinnery Oak-Dominated State (1a): Decrease in black grama with subsequent decrease in dropseeds and threeawns. Increase in Shinnery oak as a result of drought, above average precipitation (>16 inches), grazing, fire suppression, interspecific competition, and coarse textured soils.

Key indicators of approach to transition:

- Loss of black grama and other grass species cover
- Increase of dropseed/threeawn and shinnery oak
- Surface soil erosion and bare patch expansion

Transition to Historic Plant Community (1b): The Shinnery oak-dominated state begins to transition toward the historic plant community as drivers such as drought, but also above average precipitation (e.g., 16 inches) discontinue. Brush control can also drive the Shinnery oak state toward a grassland state.

Sand Sage Dominated: This state is dominated by sand sage with subdominant grass species from the historic plant community. Sand sage occurs as a result of insufficient herbicide application in Shinnery oak dominated sites with subdominant sand sage. Sand sage either reestablishes dominance or colonizes from an off-site location and stabilizes soils. Sand sage stabilizes light sandy soils from wind erosion and provides a harbor for grass and forb species in heavily grazed conditions (Davis and Bonham 1979). Sand sage abundance increases with drought and/or heavy grazing, but decreases with light grazing due to herbaceous plant competition. Grass and forb species can reestablish as competition from sand sage is relatively

light. Herbicide applied in the spring, especially when growth and photosynthesis rates are greatest, can reduce sand sage if there is subsequent rest from grazing (Herbel et al. 1979, Pettit 1986). Brush management should maintain patches of sand sage to prevent wind erosion and subsequent dune formation.

Diagnosis: This state is dominated by sand sage with subdominant grass species, such as black grama, dropseeds, threeawns, and blue grama. Sand sage tends to occur in sites with coarser textured soils.

Transition to Sand Sage Dominated (2): Sand sage appears from off-site locations and/or increases after insufficient herbicide applications aimed at removing Shinnery oak and sand sage.

Key indicators of approach to transition:

- Increase of sand sage seedlings and grasses
- Reduced soil erosion

Transition to Historic Plant Community (3): The sand sage dominated state transitions toward the historic plant community as sand sage decreases primarily through brush management but also with light intensity grazing management. Drought reduction will also support a transition to the historic plant community.

Lehmann Lovegrass + Natives: This state is dominated by Lehmann lovegrass with subdominant grass species from the historic plant community. Lehmann lovegrass is a warm-season, perennial bunchgrass that was introduced from South Africa in the 1930's for rangeland restoration purposes (Humphrey 1970). Lehmann lovegrass invades from off-site locations with projects utilizing lovegrass for reseeding, soil stabilization, or highway projects. Lehmann lovegrass provides a winter and early spring forage for grazing. Lehmann lovegrass is vigorous in sandy to sandy loam soils which receive approximately 6-8 inches of summer precipitation (Cox et al. 1988). Lehmann lovegrass's aggressive competitive exclusion of native grass species has been attributed to lovegrass's low summer palatability, which reduces vigor of native species and allows lovegrass to increase vigor before grazing. Also, Lehmann lovegrass abundant seed production and establishment, especially after disturbances, allows for increased competition (Cable 1971, Cox et al. 1981). Lehmann lovegrass generally is tolerant to fire because of an aggressive seed-bank; however, severe fires can cause mature lovegrass mortality (Sumrall et al. 1991). Herbicide and reseeding is recommended for control of Lehmann lovegrass (Winn 1991).

Diagnosis: Lehmann lovegrass and grass species from the historic plant community, such as black grama, dropseeds, threeawns, and blue grama, dominate this state.

Transition to Lehmann lovegrass and native grass species (4a): Decrease in black grama with subsequent decrease in dropseeds and threeawns. Increase in Lehmann lovegrass as a result of drought, grazing, fire and interspecific competition from nearby sources of Lehmann lovegrass.

Key indicators of approach to transition:

- Loss of black grama and other grass species cover
- Disturbance and nearby source of Lehmann lovegrass
- Increase of Lehmann lovegrass seedlings

Transition to Historic Plant Community (4b): The Lehmann lovegrass/native grass state transitions toward the historic plant community after actions such as herbicide application and native reseeding have occurred. In addition, prevention of disturbances such as fire and livestock grazing also will encourage the transition to a native grass community.

Grass/Mesquite: This state is dominated by honey mesquite with dropseeds and/or threeawns. Black grama generally is rare as a result of heavy grazing intensity. Honey mesquite invades through seed dispersal from grazing livestock and/or wildlife. Dropseeds and threeawns cohabitate with mesquite due to sufficient precipitation. Mesquite tends to be arborescent due to less soil erosion relative to the Coppice Dunes state which reflects large soil loss. Mesquite obtains approximately half of its nitrogen from symbiotic bacteria housed in root nodules (Lajtha and Schlesinger 1986). Mesquite also provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Historical fire occurrences reduced mesquite abundance by disrupting seed production cycles and suppressing seedlings; thus, grass species remained dominant. However, fire suppression has allowed mesquite to increase in density and abundance, increasing mesquite resistance to fires through aggressive resprouting. Herbicide application combined with subsequent prescribed fire may be effective in mesquite reduction (Britton and Wright 1971).

Diagnosis: This state is co-dominated by honey mesquite and dropseeds or threeawns.

Transition to Grass/Mesquite State (5a): This state occurs due to a decrease in black grama primarily from heavy grazing intensity and from an introduction of mesquite seeds from grazers. Dropseeds and threeawns increase and co-exist in the absence of black grama. Fire suppression also is responsible for an increase in mesquite.

Key indicators of approach to transition:

- Loss of black grama
- Increase of dropseeds and/or threeawns
- Increase of mesquite seedlings

Transition to Historic Plant Community (5b): Transition to the historic plant community requires brush management though herbicide application and possibly prescribed fire to reduce mesquite abundance. Once shrub species are removed, prescribed fire may be useful in maintaining a dominant grassland. Precipitation is also necessary in conjunction with management activities to support a dominant grassland.

Coppice Dunes: This state is dominated by coppice mesquite dunes with minimal or no grass cover. Honey mesquite occurs in a multi-stemmed growth form which cultivates it's dune

formation by entrapping drifting sands. Mesquite utilizes its extensive tap and lateral roots to benefit from moisture deep in coarse textured soils. Grass species cannot compete for moisture, especially with compounding perturbations such as heavy grazing and drought. Soils succumb to wind erosion with the depletion of grass cover and eventually dunes form around mesquite plants (Gould 1982). Brush management is limited to herbicide application, biological control, or manual removal, as a lack of grass cover prevents prescribed burning. Seeding subsequent to brush control may transition this State toward the historic plant community.

Diagnosis: This state is characterized by low growing, multi-stemmed mesquite plants which form Coppice dunes by drifting soils from wind erosion. As grass cover decreases, windblown soils are removed from unprotected, inter-dune areas. Soils are then re-deposited on dunes which increases dune size.

Transition to Mesquite Coppice Dunes State (6): Decrease in black grama with subsequent decrease in dropseeds and threeawns due to competition with mesquite especially during drought, heavy grazing, and fire suppression. Competitive exclusion of grasses leads to wind erosion of sandy soils and dune formation of low growing mesquite plants.

Key indicators of approach to transition:

- Loss of black grama and other grass species cover
- Wind erosion as evidenced by pedestalled plants
- Bare patch expansion
- Increase of Coppice dune mesquites

Transition to Historic Plant Community (7): Transition toward the historic plant community requires mesquite removal though either herbicide application, biological control, or manual removal. In addition, seeding of native grass species with subsequent years of sufficient moisture is critical.

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

This site provides habitat which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, spotted ground squirrel, black-tailed prairie dog, yellow-faced pocket gopher, Ord's kangaroo rat, Northern grasshopper mouse, southern plains woodrat, badger, meadowlark, roadrunner, burrowing owl, white-necked raven, cactus wren, pyrrhuloxia, lesser prairie chicken, mourning dove, scaled quail, Harris' hawk, side-blotched lizard, marbled whiptail, Texas horned lizard, prairie rattlesnake, plains spadefoot toad, and ornate box turtle.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group	Soil Series	Hydrologic Group
Berino	B	Monahans	B
Cacique	C	Pajaritio	B
Dona Ana	B	Ratliff	B
Ima	B	Reakor	B
La Lande	B	Sotim	B
McCarran	C	Wickett	C
Midessa	B	Wink	B
Mobeetie	B		

Recreational Uses:

This site offers recreation potential for hiking, horseback riding, nature observation, and photography, bird, antelope and predator hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers.

Wood Products:

This site has no potential for wood products.

Other Products:

This site is suitable for grazing by all classes and kinds of livestock during all seasons of the year. Under retrogression, plants such as black grama, blue grama, bush muhly, plains bristlegrass, Arizona cottontop, vine mesquite, little bluestem and fourwing saltbush will decrease while the dropseeds, threeawns, tobosa, yucca, catclaw mimosa, javelinabush, mesquite and broom snakeweed will increase. This site responds well to brush management and deferment. It is best suited to a system of management that rotates the season of use.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month	
Similarity Index	Ac/AUM
100 - 76	2.7 – 3.8
75 – 51	3.5 – 5.0
50 – 26	5.0 – 8.0
25 – 0	8.1 +

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
blue grama	Bouteloua gracilis	EP	D	D	D	D	D	P	P	P	P	P	D	D
black grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
little bluestem	Schizachyrium scoparium	EP	D	D	D	D	D	P	P	P	D	D	D	D
bush muhly	Muhlenbergia porteri	EP	P	P	P	P	P	P	P	P	P	P	P	P
plains bristlegrass	Setaria vulpiseta	EP	D	D	D	D	D	P	P	P	P	D	D	D
Arizona cottontop	Digitaria californica	EP	D	D	D	D	D	P	P	P	D	D	D	D
vine mesquite	Panicum obtusum	EP	D	D	D	D	D	D	P	P	P	P	D	D
fourwing saltbush	Atriplex canescens	EP	P	P	P	P	P	D	D	D	D	D	P	P
Arizona filaree	Erodium cicutarium	EP	N/S	P	P	P	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Texas filaree	Erodium texanum	EP	N/S	P	P	P	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Supporting Information

Associated Sites:

Site Name	Site ID	Site Narrative

Similiar Sites:

Site Name	Site ID	Site Narrative

State Correlation:
This site has been correlated with the following states: Texas

Data Source	Number of Records	Sample Period	State	County

Type Locality:

Relationship to Other Established Classifications:

Other References:
Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Characteristic Soils Are:

Berino fine sandy loam	Cacique fine sandy loam	Cacique loamy fine sand thin
Dona Ana fine sandy loam	Kinco fine sandy loam	Ima fine sandy loam
McCarran fine sandy loam 8	La Lande fine sandy loam	Midessa fine sandy loam
Dona Ana sandy loam	Monahans fine sandy loam	Mobeetie fine sandy loam
Pajarito loamy fine sand thin	Pajarito fine sandy loam	Ratliff fine sandy loam
Sotim	Reaker sandy loam	Wink fine sand
Wickett fine sandy loam	Wink fine sandy loam	

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Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	07/12/1979	Don Sylvester	07/12/1979

Site Description Revision:

Author	Date	Approval	Date
George Chavez	04/12/2002	George Chavez	04/30/03
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