

Ecological site R038XB110NM

Sandy

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General information

**Provisional.** A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.



Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site usually occurs on level to gently sloping or undulating piedmont slopes or plains. Slopes may range to 15 percent but will average less than 10 percent. Elevation range from about 5,000 to 6,500 feet above sea level.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Plain
Elevation	1,524–1,981 m
Slope	0–15%
Aspect	Aspect is not a significant factor

## Climatic features

Average annual precipitation varies from about 12 inches to just over 16 inches. Substantial fluctuations from year to year are common, ranging from a low of about 6 inches to a high of over 30 inches. Approximately one-half of the annual precipitation comes in the form of rainfall during the months of July, August, and September, although wintertime precipitation in the form of snow, sleet, or rain is sometimes significant. Spring and late fall months are normally dry.

The average frost-free period ranges from about 165 to 190 days and extends from approximately the third or fourth week in April to mid October. Average annual air temperatures are about 56 degrees F. Summer maximums can exceed 100 degrees F and winter minimums on occasion go below zero. Monthly mean temperatures generally exceed 70 degrees F for the period of June through August.

Growing conditions favor warm-season perennial vegetation, although late winter and late summer precipitation is adequate to foster a significant cool-season component in the potential plant community. Occasional wet springs also create good conditions for annual forb production, but frequent winds from the west and southwest are common during this time of year and tend to deplete soil moisture at a critical time for the growth of these plants.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

**Table 3. Representative climatic features**

Frost-free period (average)	187 days
Freeze-free period (average)	211 days
Precipitation total (average)	406 mm

## Influencing water features

This site is not influenced by water from a wetland or stream.

## Soil features

The soils are moderately deep to deep and well drained. Typically, the surface layer is a fine sandy loam to loamy fine sand more than 5 inches thick over sandy clay loam, clay loam, fine sandy loam, or very fine sandy loam. The soils have moderately slow to moderately rapid permeability with moderate to high water-holding capacity.

Due to their sandy surface textures, these soils are subject to soil blowing when the surface is not adequately protected by plant cover and may become duned or hummocky where natural vegetation has declined.

**Table 4. Representative soil features**

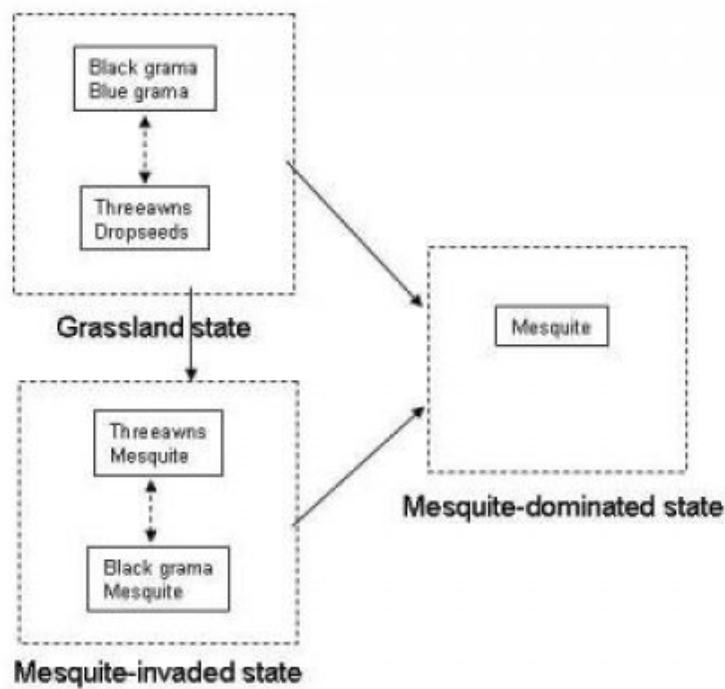
Surface texture	(1) Sandy loam (2) Loamy sand (3) Loamy fine sand
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderately slow
Soil depth	152–183 cm
Available water capacity (0-101.6cm)	15.24–30.48 cm

Ecological dynamics

This site has a grassland aspect characterized by short and mid-grasses. Black grama and blue grama co-dominate, with lesser amounts of sand dropseed, threeawns, sideoats grama, tobosa, and spike dropseed typically present. Soaptree yucca, Mormon-tea, and occasionally sacahuista are the principal woody or shrub-like species. Annual buckwheats, filaree, globemallow, and desert bailey are common in minor amounts. Broom snakeweed is most common in certain wet years and as the plant community deteriorates from its potential.

State and transition model

State-Transition model: MLRA 36, WP-3, Upland site group, Sandy



State 1  
Historic Climax Plant Community

Community 1.1  
Historic Climax Plant Community

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Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	291	527	762
Forb	29	53	76
<b>Total</b>	<b>320</b>	<b>580</b>	<b>838</b>

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	7%
Grass/grasslike foliar cover	0%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	10%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	71%

Figure 5. Plant community growth curve (percent production by month). NM0610, R038XB110NM Sandy HCPC. R038XB110NM Sandy HCPC Mixed short/mid-grassland with scattered shrubs and a minor forb component..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	7	10	15	25	25	8	5	0	0

### Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1				197–231	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	197–231	–
2				99–132	
	blue grama	BOGR2	<i>Bouteloua gracilis</i>	99–132	–
3				7–33	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	7–33	–
4				7–20	
	hairy grama	BOHI2	<i>Bouteloua hirsuta</i>	7–20	–
5				33–66	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	33–66	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	33–66	–
6				20–53	
	threeawn	ARIST	<i>Aristida</i>	20–53	–
	ring muhly	MUTO2	<i>Muhlenbergia torreyi</i>	20–53	–

7				7-33	
	tobosagrass	PLMU3	<i>Pleuraphis mutica</i>	7-33	-
8				7-33	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	7-33	-
9				7-20	
	common wolfstail	LYPH	<i>Lycurus phleoides</i>	7-20	-
10				7-33	
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	7-33	-
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	7-33	-
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	7-33	-
11				7-20	
	Grass, annual	2GA	<i>Grass, annual</i>	7-20	-
	low woollygrass	DAPU7	<i>Dasyochloa pulchella</i>	7-20	-
<b>Forb</b>					
12				7-33	
	desert marigold	BAMU	<i>Baileya multiradiata</i>	7-33	-
	croton	CROTO	<i>Croton</i>	7-33	-
	redstem stork's bill	ERCI6	<i>Erodium cicutarium</i>	7-33	-
	buckwheat	ERIOG	<i>Eriogonum</i>	7-33	-
	globemallow	SPHAE	<i>Sphaeralcea</i>	7-33	-
13				7-20	
	herb sophia	DESO2	<i>Descurainia sophia</i>	7-20	-
	locoweed	OXYTR	<i>Oxytropis</i>	7-20	-
	Russian thistle	SAKA	<i>Salsola kali</i>	7-20	-
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus</i> var. <i>flaccidus</i>	7-20	-
14				7-33	
<b>Shrub/Vine</b>					
15				7-33	
	soaptree yucca	YUEL	<i>Yucca elata</i>	7-33	-
16				7-20	
	mormon tea	EPVI	<i>Ephedra viridis</i>	7-20	-
	sacahuista	NOMI	<i>Nolina microcarpa</i>	7-20	-
17				7-33	
	sand sagebrush	ARFI2	<i>Artemisia filifolia</i>	7-33	-
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	7-33	-
18				7-33	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	7-33	-
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	7-33	-
19				7-20	

## Animal community

Habitat for Wildlife:

This ecological site provides habitat which can support a resident animal community characterized by pronghorn

antelope, black-tailed jackrabbit, Botta's pocket gopher, plains pocket mouse, white-footed mouse, cactus mouse, Northern grasshopper mouse, Ord's kangaroo rat, Southern plains woodrat, kit fox, badger, roadrunner, burrowing owl, loggerhead shrike, Scott's oriole, cactus wren, scaled quail, mourning dove, lesser earless lizard, leopard lizard, desert spiny lizard, round-tailed horned lizard, plains spadefoot toad, and black-headed snake.

Where large soaptree yucca, cholla cactus, and woody shrubs are present Scott's oriole, cactus wren, and mourning dove nest. Chestnut-collared longspur winters on this site.

## Hydrological functions

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

Soil Series-----Hydrologic Group

Ellicott-----A

Clovis-----?

Harvey-----?

Palma-----?

Penistaja-----?

## Recreational uses

This site offers limited recreation potential for hiking, horseback riding, picnicking, camping, nature observation, photography, and hunting for pronghorn antelope, scaled quail, and mourning dove. When favorable spring moisture conditions occur, a colorful display of wildflowers may be seen.

## Wood products

This site has no significant value for wood products.

## Other products

Grazing:

This site, at its potential, is suitable for grazing in all seasons of the year. Although green forage is produced to some extent in the spring by annual forbs and a few early season grasses, the major production begins in early July and extends through September. The site is best adapted for cattle and possibly sheep and horses. It is less suitable for goats except in the lower condition classes where woody plants tend to take over. Site deterioration caused by inadequately managed livestock grazing is characterized by a decline in black grama and blue grama and an increase in threeawns, ring muhly, dropseeds, and tobosa. Moderate to heavy mesquite stands and hummocking may characterize serious retrogression. Brush control may be needed to affect a reasonable rate of recovery.

## Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index-----Ac/AUM

100 - 76-----3.6 - 4.5

75 - 51-----4.3 - 7.0

50 - 26-----6.7 - 11.5

25 - 0-----11.5+

## Type locality

Location 1: Grant County, NM
Location 2: Hidalgo County, NM

## Other references

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Socorro, Sierra, Grant, Hidalgo, Catron.

Characteristic Soils Are:  
Ellicott

Other Soils included are: Clovis, Harvey, Palma, Penistaja

## Contributors

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## Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**
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7. **Amount of litter movement (describe size and distance expected to travel):**
- 
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
- 
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
- 
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
- 
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
- 
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant:
- Sub-dominant:
- Other:
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
- 
14. **Average percent litter cover (%) and depth ( in):**
- 
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
- 
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not**



invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:

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17. **Perennial plant reproductive capability:**

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