USDA Natural Resources Conservation Service

Ecological site R035XB018NM
Loamy Bottom 6-10"

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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.

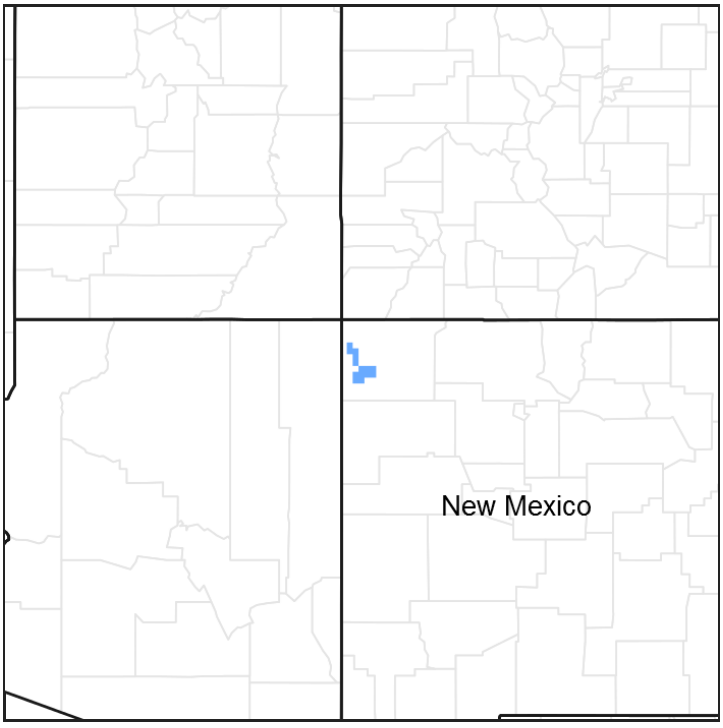

Figure 1. Mapped extent

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	(1) *Atriplex canescens*
Herbaceous	(1) *Pascopyrum smithii* (2) *Sporobolus airoides*

Physiographic features

This site occurs on floodplains along ephemeral streams. Therefore, it benefits from run-in moisture from adjacent areas. Slopes range from 0 to 1 percent. Elevations range from 5,300 to 5,800 feet.

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Elevation	1,615–1,768 m
Slope	0–1%
Aspect	Aspect is not a significant factor

Climatic features

Mean annual precipitation varies from 5 to 8 inches with about 60% of it coming as rain from April through October. May and June are the driest months. Most of the precipitation from November through March comes as snow. High-velocity winds are common in late winter and early spring.

Mean temperatures for the hottest month, July, are about 83 degrees F. The coldest month is January, when the mean temperature is about 27 degrees F. Extreme temperatures of 104 and -17 degrees F have been recorded. The frost-free period ranges from 140 to 160 days.

The cool-season plants start growth in March and end with plant maturity and seed dissemination about mid-June. Warm-season plants grow from June through September, taking advantage of the moisture and warmth from tropical air out of the Gulf of Mexico. About 40 percent of the total precipitation is received during these summer months. The other 60 percent, received from fall through spring, influences cool-season plants.

The tabular climate summary for this ESD was generated by the Climate Summarizer (http://www.nm.nrcs.usda.gov/technical/handbooks/nrph/Climate_Summarizer.xls) using data
from the following climate stations (results are unweighted averages):

296098 Newcomb, NM (Period of record = 1948 to 1971)

298284 Shiprock, NM (Period of record = 1926 to 2006)

Table 3. Representative climatic features

Frost-free period (average)	167 days

Freeze-free period (average)	186 days
Precipitation total (average)	178 mm

Influencing water features

This site occurs on floodplains along ephemeral streams. Therefore, it benefits from run-in moisture from adjacent areas.

Soil features

The soils are very deep and well drained. They are formed in alluvium derived from sandstone and shale. Surface textures include loam. The subsoil has textures of silty clay loam, fine sandy loam, silt loam, and very fine sandy loam. Permeability is moderately slow. Available water holding capacity is high. Runoff is slow, and the hazard of water erosion is slight. The hazard of soil blowing is severe. The soils are mildly to strongly alkaline (pH 7.4-9.0), nonsaline (EC 0-2), and slightly sodic (SAR 5-13).

Shiprock SSA:
175 – Suwanee loam

Additional information may be found in Section II of the Field Office Technical Guide.

Ecological dynamics

This ecological site has a plant community made up primarily of shortgrasses, midgrasses, shrubs, and a relatively small amount of forbs. In the reference plant community there is a mixture of cool-season and warm-season grasses.

Plant species most likely to invade or increase on this site when it deteriorates are black greasewood, annual sunflower, cocklebur, goldenweed, Russian thistle, and threadleaf rubber rabbitbrush. Continuous livestock grazing during winter and spring decreases the cool-season grasses and increases lower forage value grasses and shrubs.

The reference plant community has been determined by study of relict areas or areas protected from excessive grazing. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures, and historical accounts have also been used.

State and transition model

Ecosystem states

1. Reference Plant Community

State 1 submodel, plant communities

1.1. Reference Plant Community

State 1
Reference Plant Community

Community 1.1
Reference Plant Community

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Table 4. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	720	1116	1513
Shrub/Vine	166	285	404
Forb	11	56	101
Total	**897**	**1457**	**2018**

Figure 5. Plant community growth curve (percent production by month). NM0374, R035XB018NM-Loamy Bottom 6-10 inch HCPC. Average

Precipitation Year.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
6	6	7	6	6	5	11	14	12	12	8	7

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	**western wheatgrass**			224–605	
	western wheatgrass	PASM	*Pascopyrum smithii*	224–605	–
2	**alkali sacaton**			135–404	
	alkali sacaton	SPAI	*Sporobolus airoides*	135–404	–
3	**squirreltail**			9–101	
	squirreltail	ELEL5	*Elymus elymoides*	9–101	–
4	**galleta**			9–101	
	James' galleta	PLJA	*Pleuraphis jamesii*	9–101	–
5	**other perennial grasses**			45–202	
Forb					
5	**perennial forbs**			9–61	
7	**annual forbs**			0–40	
Shrub/Vine					
8	**fourwing saltbush**			135–404	
	fourwing saltbush	ATCA2	*Atriplex canescens*	135–404	–
9	**threadleaf rabbitbrush**			0–40	
	rubber rabbitbrush	ERNAC2	*Ericameria nauseosa ssp. consimilis*	0–40	–
10	**other shrubs**			0–101	

Animal community

Livestock -- This site is suitable for yearlong grazing by all classes of livestock. Accessibility is usually very good because stock tanks can be built in these areas. Erosion is not a hazard unless the vegetative cover has been severely reduced. The site may be hazardous to livestock during periods of occasional flooding following convective summer

storms.

Wildlife -- Riparian plants may grow near watercourses where soil moisture is adequate. These types of vegetation provide habitat for a large number of wildlife species. Riparian vegetation should be replanted in drainages where the soil is moist. Protection from grazing is essential. Competition between cattle and wildlife is high year-round.

Hydrological functions

Permeability is moderately slow. Available water holding capacity is high. Runoff is slow, and the hazard of water erosion is slight.

Recreational uses

Hunting, horseback riding, and wildlife observation are occasional recreational activities on this site. Excellent condition loamy bottoms have tremendous aesthetic appeal as grasslands.

Wood products

This site has no significant value for wood products.

Type locality

Location 1: San Juan County, NM	
Township/Range/Section	T24N R17W S11
General legal description	Newcomb SE Quad – along Captain Tom Wash, 7 miles NE of Newcomb, NM – NE ¼ of Sec. 11, T24N, R17W - Navajo Reservation, NM.

Contributors

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Unknown

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:**

   _____

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

   _____

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

   _____

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

   _____

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

   _____

6. **Extent of wind scoured, blowouts and/or depositional areas:**

   _____

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):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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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:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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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:**
