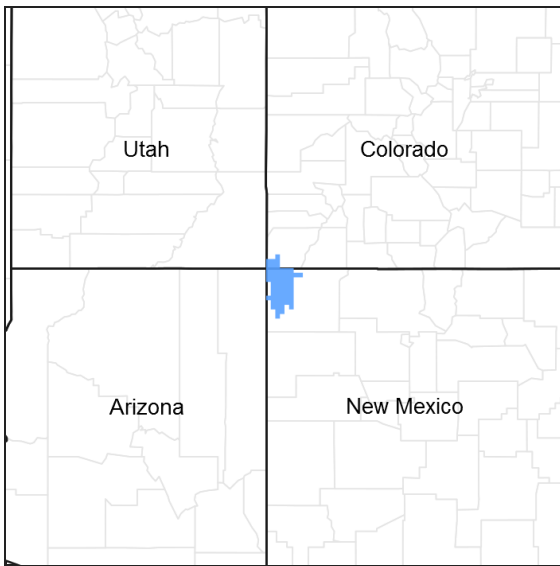


## Ecological site R035XB271AZ Loamy Upland 6-10" p.z. Saline-Sodic

Accessed: 04/30/2024

### 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.

### MLRA notes

Major Land Resource Area (MLRA): 035X–Colorado Plateau

AZ CRA 35.2 - Colorado Plateau Shrub – Grasslands

Elevations range from 3500-5500 feet and precipitation averages 6 to 10 inches per year. Vegetation includes shadscale, fourwing saltbush, Mormon tea, blackbrush, Indian ricegrass, galleta, blue grama, and black grama. The soil temperature regime is mesic and the soil moisture regime is typic aridic. This unit occurs within the Colorado Plateau Physiographic Province and is characterized by a sequence of flat to gently dipping sedimentary rocks eroded into plateaus, valleys and deep canyons. Sedimentary rock classes dominate the plateau with volcanic fields occurring for the most part near its margin.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	(1) <i>Atriplex corrugata</i>
Herbaceous	(1) <i>Sporobolus airoides</i>

### Physiographic features

This site occurs on summits, footslopes and backslopes of undulating plateaus. This site also occurs on toeslopes and knolls of undulating plateaus.

This site is in an upland position. It does not benefit from run-in moisture from adjacent areas, nor does it sustain excessive loss of moisture from runoff.

**Table 2. Representative physiographic features**

Landforms	(1) Plateau
Flooding frequency	None
Elevation	1,524–1,707 m
Slope	0–45%
Aspect	NW

### Climatic features

The climate of the land resource unit is arid with warm summers and cool winters. This is one of the driest land resource units on the Colorado Plateau with an average annual precipitation ranging from 6 to 10 inches per year. It is also very erratic, often varying substantially from year to year. 40 to 50 percent of the precipitation is received from October through early May. This precipitation comes as gentle rain or snow from frontal storms coming out of the Pacific Ocean. Snow is common from November through February. Generally no more than an inch or two of snow accumulates and usually melts within a day or two. The remaining precipitation, approximately 50 to 60 percent, is received from July through September as spotty, unreliable and sometimes violent thunderstorms. The moisture for this precipitation originates in the Gulf of Mexico (and the Pacific Ocean in the fall) and flows into the area on the north end of the Mexican monsoon. Late May through late June is generally a dry period. The mean annual temperature ranges from 53 to 56 degrees Fahrenheit (F). The frost-free period (air temperature > 32 degrees F) ranges from 135 to 160 days (@ 50 percent probability). Strong winds are common, especially in the spring.

**Table 3. Representative climatic features**

Frost-free period (average)	160 days
Freeze-free period (average)	184 days
Precipitation total (average)	254 mm

### Influencing water features

#### Soil features

The soils on this site are moderately deep (40") to very deep (60+). They are formed in alluvium and residuum derived from shale and siltstone.

Surface textures include loam and silt loam.

The subsurface textures include loam, silt loam, silty clay loam, clay loam and clay.

Water erosion hazard is moderate to severe and wind erosion hazard is severe.

Typical taxonomic units include:

SSA 717 Shiprock NM - MU's 220 Chinde and 250 and 260 Littlehat part.

**Table 4. Representative soil features**

Parent material	(1) Alluvium–shale and siltstone
Surface texture	(1) Loam (2) Silt loam

Family particle size	(1) Loamy
Drainage class	Moderately well drained to well drained
Permeability class	Moderately slow to moderate
Soil depth	102–203 cm
Surface fragment cover <=3"	0–10%
Available water capacity (0-101.6cm)	0–12.7 cm
Calcium carbonate equivalent (0-101.6cm)	10–20%
Electrical conductivity (0-101.6cm)	16 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	30
Soil reaction (1:1 water) (0-101.6cm)	7.9–9.8
Subsurface fragment volume <=3" (Depth not specified)	0–10%

## Ecological dynamics

The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The historical climax plant community represents the natural potential plant communities found on relict or relatively undisturbed sites. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as grazing, fire, or drought.

Production data provided in this site description is standardized to air-dry weight at the end of the summer growing season. The plant communities described in this site description are based on near normal rainfall years.

NRCS uses a Similarity Index to compare existing plant communities to the plant communities described here. Similarity Index is determined by comparing the production and composition of a plant community to the production and composition of a plant community described in this site description. To determine Similarity Index, compare the production (air-dry weight) of each species to that shown in the plant community description. For each species, count no more than the maximum amount shown for the species, and for each group, count no more than the maximum shown for the group. Divide the resulting total by the total normal year production shown in the plant community description. If rainfall has been significantly above or below normal, use the total production shown for above or below normal years. If field data is not collected at the end of the summer growing season, then the field data must be corrected to the end of the year production before comparing it to the site description. The growth curve can be used as a guide for estimating production at the end of the summer growing season.

## State and transition model



**State 1  
Historic Climax Plant Community**

**Community 1.1  
Historic Climax Plant Community**

This site has a plant community made up primarily of low growing shrubs and a sparse grass cover. Some perennial and annual forbs frequent the site. The original plant community has a mixture of warm and cool season plants. Plant species most likely to invade or increase on this site when it deteriorates are Russian thistle, mustard, nodding wildbuckwheat and mat saltbush. Because of the high salts and sodium of the soil, mat saltbush will always dominate the site. It has adapted well to the site where other plants are coming in as the soil further develops.

**Table 5. Annual production by plant type**

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	92	132	170
Grass/Grasslike	13	22	33
Forb	7	13	21
<b>Total</b>	<b>112</b>	<b>167</b>	<b>224</b>

**Figure 5. Plant community growth curve (percent production by month). AZ3521, 35.2 6-10" p.z. all sites. Growth begins in the spring and continues through the summer. Most growth in this CRA occurs in the spring using stored winter moisture..**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	1	9	20	27	14	10	11	5	3	0	0

Figure 6. Plant community growth curve (percent production by month). AZ5203, 35.2 6-10" p.z. alkali sacaton. Growth begins in the spring, most growth occurs in the summer, goes dormant in the fall..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	5	10	20	10	20	20	10	5	0	0

## Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
<b>Shrub/Vine</b>					
0				118–135	
	mat saltbush	ATCO4	<i>Atriplex corrugata</i>	101–127	–
	valley saltbush	ATCU	<i>Atriplex cuneata</i>	0–9	–
	wheelscale saltbush	ATELF	<i>Atriplex elegans var. fasciculata</i>	0–9	–
	Shrub (>.5m)	2SHRUB	<i>Shrub (&gt;.5m)</i>	0–3	–
	plains pricklypear	OPPO	<i>Opuntia polyacantha</i>	0–2	–
<b>Grass/Grasslike</b>					
0				17–26	
	alkali sacaton	SPAI	<i>Sporobolus airoides</i>	9–17	–
	Grass, perennial	2GP	<i>Grass, perennial</i>	0–9	–
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	0–9	–
	squirreltail	ELELE	<i>Elymus elymoides ssp. elymoides</i>	0–6	–
<b>Forb</b>					
0				9–17	
	Forb, annual	2FA	<i>Forb, annual</i>	2–9	–
	Forb, perennial	2FP	<i>Forb, perennial</i>	2–3	–
	onion	ALLIU	<i>Allium</i>	0–2	–
	widewing springparsley	CYPU	<i>Cymopterus purpurascens</i>	0–2	–
	nodding buckwheat	ERCE2	<i>Eriogonum cernuum</i>	0–2	–
	scarlet globemallow	SPCO	<i>Sphaeralcea coccinea</i>	0–2	–

## Animal community

This site has limited use potential for most classes of livestock. The sparse cover limits readily available forage for animals. Sheep and goats would benefit best, grazing the site in the winter season. This site will seldom be used as a key management area for livestock. Grazing should be conducted by using prescribed grazing to leave as much cover and residue as possible to help control the natural erosion that occurs.

This site is a wintering area for mule deer and pronghorn antelope. Topography provides cover for big game.

## Recreational uses

This site occurs on ridges, toeslopes, footslopes and knolls of undulating plateaus. Its bareness and sparse plant cover provides an interesting scene from that of adjacent sites.

Winters are cold and spring time is usually windy. Summers are mild with the typical southwest thunderstorms. Main activities include hiking, photography, wildlife observation.

## Other information

T & E: A Threatened and Endangered plant Mesa Verde cactus (*Sclerocactus mesae-verde*) occurs on this site

## Type locality

Location 1: San Juan County, NM	
Township/Range/Section	T27N R17W S6
General legal description	Table Mesa quad - about six miles southeast of Table Mesa - Navajo Res., NM.

## 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:**

- 
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):**
- 
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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