

## **Ecological site R030XB101NV TABLELAND 5-7 P.Z.**

Last updated: 2/26/2025  
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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.

### **Ecological site concept**

This site occurs on flat-topped summits of mesas overlying tertiary sediments. Slopes range from 0 to 4 percent. Elevations are 2000 to 3500 feet. The soil associated with this site are very shallow and moderately coarse to medium textured. The soil surface has a cover of broken hardpan fragments ranging from 60 to 80 percent.

Please refer to group concept R030XB110NV to view the provisional STM.

### **Associated sites**

R030XB019NV	<b>Eroded Fan Remnant Pavette 4-6 P.Z.</b>
R030XB054NV	<b>SANDY 3-5 P.Z.</b>

### **Similar sites**

R030XB105NV	<b>BOULDERY LIMESTONE SLOPE 5-7 P.Z.</b> KRLA2-MOUT-SAMO3 codominant; occurs on very steep mountain sideslopes
R030XB111NV	<b>GRAVELLY LIMESTONE SLOPE 5-7 P.Z.</b> AMDU2-MOUT codominant; occurs on very steep mountain sideslopes

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	(1) <i>Mortonia utahensis</i>
Herbaceous	Not specified

### **Physiographic features**

This site occurs on flat-topped summits of mesas overlying tertiary sediments. Slopes range from 0 to 4 percent. Elevations are 2000 to 3500 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Mesa
Elevation	2,000–3,500 ft
Slope	0–4%

### **Climatic features**

The climate is hot and arid, with mild winters and very hot summers. Precipitation is greatest in the winter with a

lesser secondary peak in summer, typical of the Mojave Desert. Average annual precipitation is 5 to 7 inches. Mean annual air temperature is 56 to 63 degrees F. The average growing season is about 180 to 240 days.

Table 3. Representative climatic features

Frost-free period (average)	240 days
Freeze-free period (average)	
Precipitation total (average)	7 in

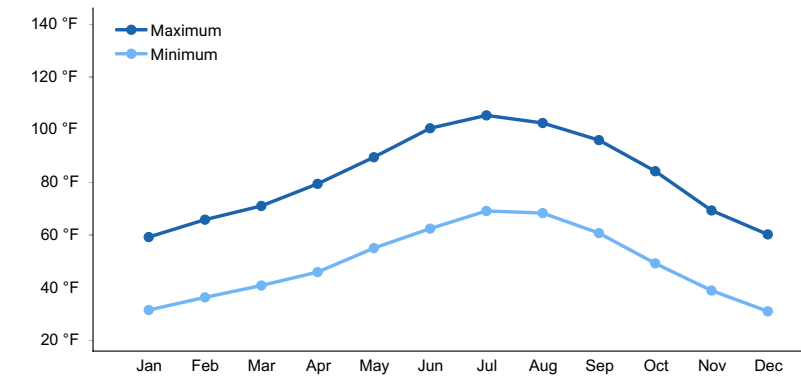


Figure 1. Monthly average minimum and maximum temperature

Influencing water features

There are no influencing water features associated with this site.

Soil features

Please refer to group concept R030XB110NV to view the provisional STM.

The soil associated with this site are very shallow and moderately coarse to medium textured. The soil surface has a cover of broken hardpan fragments ranging from 60 to 80 percent. Of the total pan fragment cover, 45 to 60 percent are gravel-sized and 15 to 20 percent of the pan fragments are greater than 3 inches in diameter (cobble-size). Water intake rates are moderately rapid and available water capacity is very low. Runoff is slow and the soils are well drained.

Table 4. Representative soil features

Drainage class	Well drained
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Ecological dynamics

As ecological condition deteriorates, creosotebush, white bursage, tiquilia, and introduced annual grasses and forbs increase as perennial grasses decline in the community.

Fire Ecology:  
Fires in the Mojave desert are infrequent and of low severity because production of annual and perennial herbs seldom provides a fuel load capable of sustaining fire. Fire generally kills white bursage. However, most white bursage plants burned because their canopies contained numerous small branches in proximity to herbaceous fuels. Range ratany is top-killed by fire. Range ratany resprouts from the root crown after fire. White ratany is partially or completely top-killed by fire. White ratany resprouts from the root crown after fire.

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

The reference plant community is dominated by Utah mortonia. Whitestem paperflower, white bursage, and range ratany are important species associated with this site. Potential vegetative composition is typically less than 5% grasses, about 10% annual and perennial forbs and 85% shrubs. Approximate ground cover (basal and crown) is about 7 percent.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	319	383	510
Forb	37	45	60
Grass/Grasslike	19	22	30
Total	375	450	600

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial grasses			9–36	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	2–14	–
	threeawn	ARIST	<i>Aristida</i>	2–14	–
	low woollygrass	DAPU7	<i>Dasyochloa pulchella</i>	2–14	–
	big galleta	PLRI3	<i>Pleuraphis rigida</i>	2–14	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	2–14	–
2	Annual Grasses			1–14	
Forb					
3	Perennial forbs			9–23	
	desert globemallow	SPAM2	<i>Sphaeralcea ambigua</i>	2–9	–
4	Annual forbs			1–45	
Shrub/Vine					
5	Primary shrubs			306–455	
	Utah mortonia	MOUT	<i>Mortonia utahensis</i>	270–315	–
	burrobush	AMDU2	<i>Ambrosia dumosa</i>	9–45	–
	whitestem paperflower	PSCO2	<i>Psilostrophe cooperi</i>	9–36	–
	woody crinklemat	TICA3	<i>Tiquilia canescens</i>	9–23	–
	white ratany	KRGR	<i>Krameria grayi</i>	5–18	–
6	Secondary shrubs			9–23	
	jointfir	EPHED	<i>Ephedra</i>	5–14	–
	creosote bush	LATR2	<i>Larrea tridentata</i>	5–14	–

## Animal community

### Livestock Interpretations:

This site is suitable for livestock grazing. White bursage is of intermediate forage value. It is fair to good forage for horses and fair to poor for cattle and sheep. However, because there is often little other forage where white bursage grows, it is often highly valuable to browsing animals and is sensitive to browsing. Range ratany is an important forage species for all classes of livestock. Palatability of range ratany is rated fair to good for cattle and sheep. White ratany is important forage for all classes of livestock. White ratany decreases in response to grazing. Under heavy grazing pressure white ratany produces phenolic acids to reduce herbivory by reducing the palatability.

Stocking rates vary over time depending upon season of use, climate variations, site, and previous and current management goals. A safe starting stocking rate is an estimated stocking rate that is fine tuned by the client by adaptive management through the year and from year to year.

### Wildlife Interpretations:

White bursage is an important browse species for wildlife. Range ratany is an important forage species for deer. Mule deer browse range ratany year-long with seasonal peaks. Mule deer peak use is from February to April and from August to October. It is one of the most important browse species for mule deer and desert bighorn sheep. Black-tailed jack rabbits rely almost exclusively on white ratany during the winter.

## Hydrological functions

Water intake rates are moderately rapid and available water capacity is very low. Runoff is slow and the soils are well drained.

## Other products

White bursage is a host for sandfood, a parasitic plant. Sandfood was a valuable food supply for Native Americans. The Papago Indians used an infusion of range ratany twigs externally for treating sore eyes and internally for dysentery. The roots provided them with a red dye for wool and other materials. The dye was also used as an ink.

## Other information

White bursage may be used to revegetate disturbed sites in southwestern deserts.

## Type locality

Location 1: Clark County, NV	
Township/Range/Section	T15S R68E S18
General legal description	About 3 miles east of Logandale. Occurs sporadically along western margin of Lower Mormon Mesa, Clark County, Nevada.

## Other references

Fire Effects Information System (Online; <http://www.fs.fed.us/database/feis/plants/>).

USDA-NRCS Plants Database (Online; <http://www.plants.usda.gov>).

## Contributors

GKB

## Approval

Sarah Quistberg, 2/26/2025

## 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	05/11/2025
Approved by	Sarah Quistberg
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):**

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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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:**

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