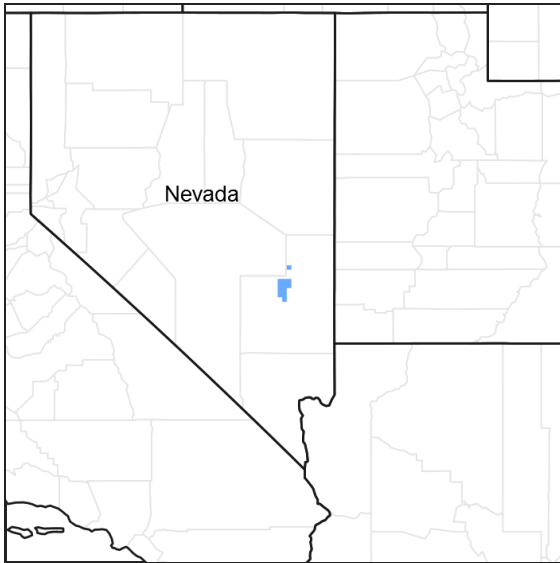


# Ecological site R029XY161NV SHALLOW COBBLY LOAM 8-10 P.Z.

Accessed: 05/19/2024

## 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.

## Associated sites

R029XY006NV	<b>LOAMY 8-10 P.Z.</b>
R029XY008NV	<b>SHALLOW CALCAREOUS LOAM 8-12 P.Z.</b>
R029XY162NV	<b>ERODED SLOPE 8-10 P.Z.</b>

## Similar sites

R029XY031NV	<b>SHALLOW DROUGHTY LOAM 5-8 P.Z.</b> GRSP dominant shrub; more productive site
R029XY037NV	<b>COBBLY SLOPE 5-8 P.Z.</b> SAVEB, LYCIU important shrubs; more productive site
R029XY107NV	<b>GRANITIC COBBLY LOAM 5-8 P.Z.</b> ATCO important shrub; ACSP12 dominant grass; more productive site
R029XY074NV	<b>SHALLOW LOAM 5-8 P.Z.</b> ATCO codominant; more productive site
R029XY036NV	<b>COBBLY LOAM 5-8 P.Z.</b> ATCO, SAVEB important shrubs

R029XY038NV	<b>COBBLY LOAM 8-12 P.Z.</b> ARTRW, codominant; more productive site
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**Table 1. Dominant plant species**

Tree	Not specified
Shrub	(1) <i>Ephedra nevadensis</i> (2) <i>Menodora spinescens</i>
Herbaceous	(1) <i>Achnatherum hymenoides</i>

**Physiographic features**

This site occurs on summits and sideslopes of fan remnants and partial ballenas on all aspects. Slopes range from 2 to 30 percent, but slope gradients of 8 to 30 percent are typical. Elevations are 4200 to about 6400 feet.

**Table 2. Representative physiographic features**

Landforms	(1) Fan remnant (2) Ballena
Elevation	1,280–1,951 m
Slope	2–30%
Aspect	E, S, W

**Climatic features**

The climate associated with this site is arid, characterized by cool, moist winters and hot, dry summers. Average annual precipitation is (6) 8 to 10 inches. Mean annual air temperature is 50 to 53 degrees F. The average growing season is about 110 to 140 days.

**Table 3. Representative climatic features**

Frost-free period (average)	140 days
Freeze-free period (average)	0 days
Precipitation total (average)	254 mm

**Influencing water features**

There are no influencing water features associated with this site.

**Soil features**

The soils associated with this site are very shallow to a duripan and well drained. These soils have formed in calcareous loess over gravelly alluvium derived from limestone. The soil profile is modified with over 35 percent rock fragments. High amounts of rock fragments occur at the soil surface. Coarse fragments on the surface provide a stabilizing affect on surface erosion conditions. Runoff is high to very high, available water capacity is very low and water intake rates are moderate. The soil series associated with this site is Treadwell.

**Table 4. Representative soil features**

Surface texture	(1) Gravelly sandy loam
Drainage class	Well drained
Permeability class	Moderate
Soil depth	10–25 cm

Surface fragment cover <=3"	30–55%
Surface fragment cover >3"	10–70%
Available water capacity (0-101.6cm)	1.02–1.27 cm
Calcium carbonate equivalent (0-101.6cm)	0–20%
Electrical conductivity (0-101.6cm)	0 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	7.9–11
Subsurface fragment volume <=3" (Depth not specified)	30–65%
Subsurface fragment volume >3" (Depth not specified)	0%

## Ecological dynamics

As ecological condition declines, Douglas' rabbitbrush, horsebrush, and galleta will increase while Indian ricegrass, desert needlegrass, winterfat and spiny hopsage will decrease. Cheatgrass is a species likely to invade this site.

### Fire Ecology:

No information is available on spiny menodora or its communities in relation to fire ecology.

Nevada ephedra generally sprouts after fire damages aboveground vegetation. Underground regenerative structures commonly survive when aboveground vegetation is consumed by fire. However, severe fires may kill shallowly buried regenerative structures. Indian ricegrass can be killed by fire, depending on severity and season of burn. Indian ricegrass reestablishes on burned sites through seed dispersed from adjacent unburned areas.

## State and transition model

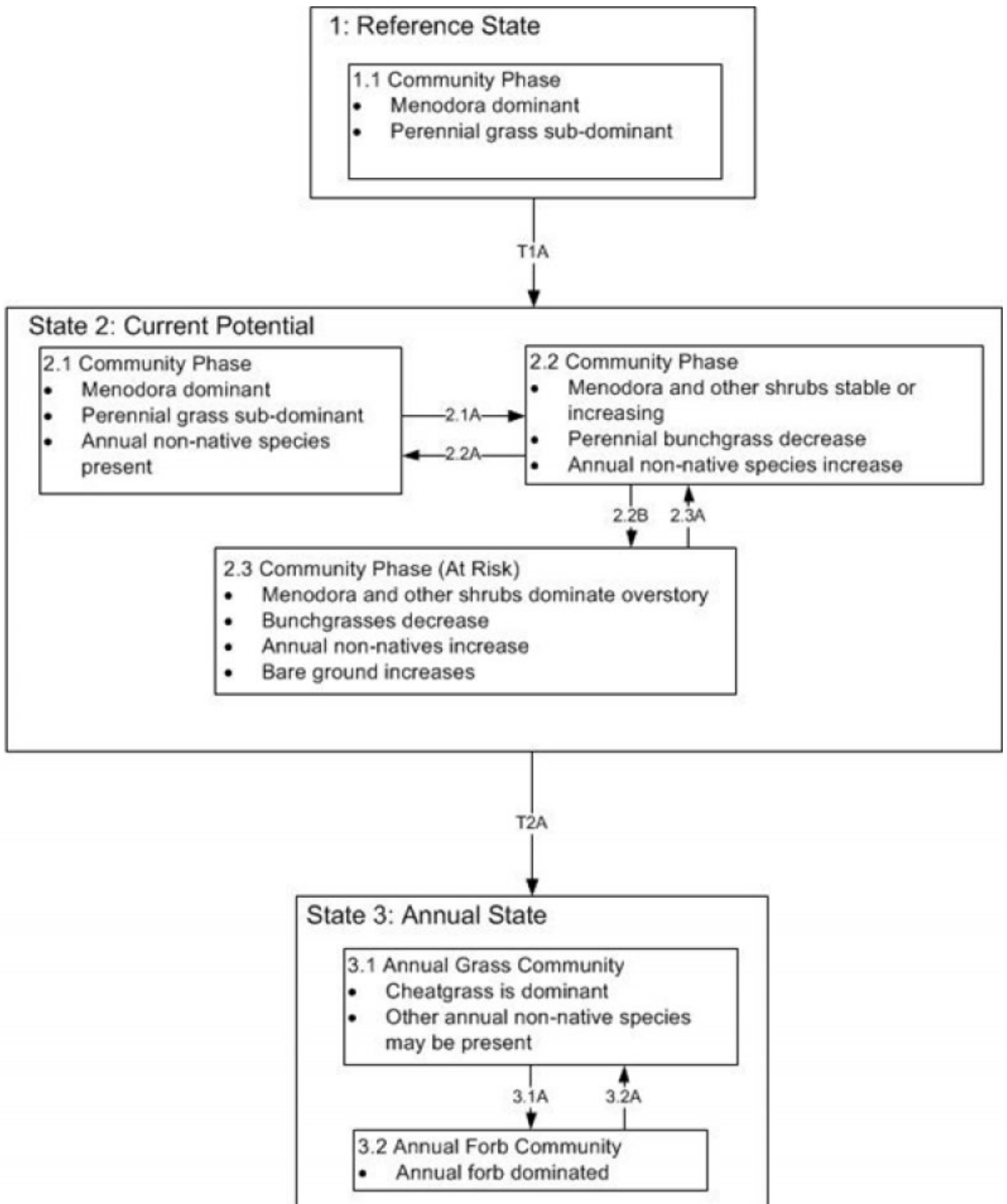


Figure 3. DRAFT STM

## T1A: introduction of non-native species

2.1A: prolonged drought/ inadequate rest and recovery from defoliation

2.2A: rest and recovery

2.2B: prolonged drought/ inadequate rest and recovery from defoliation

2.3A: recovery or changes in management

T2A: Inadequate rest and recovery from defoliation and/or prolonged drought/Catastrophic wildfire.

3.1A: fire or cheatgrass die off

3.2A: time

Figure 4. DRAFT STM LEGEND

### State 1

#### Reference State

#### Community 1.1

##### Reference Plant Community

The reference plant community is dominated by spiny menodora, Nevada ephedra, and Indian ricegrass. Other important species include Anderson wolfberry, spiny hopsage, and winterfat. Potential vegetative composition is about 20% grasses, 10% forbs, and 70% shrubs. Approximate ground cover (basal and crown) is 10 to 20 percent.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	157	235	314
Grass/Grasslike	45	67	90
Forb	22	34	45
<b>Total</b>	<b>224</b>	<b>336</b>	<b>449</b>

### State 2

#### Current Potential State

### State 3

#### Annual State

#### Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1	<b>Primary Perennial Grasses</b>			24–77	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	17–50	–
	James' galleta	PLJA	<i>Pleuraphis jamesii</i>	7–27	–
	threeawn	ARIST	<i>Aristida</i>	2–7	–
2	<b>Secondary Perennial Grasses</b>			9–27	
	King's eyelashgrass	BLKI	<i>Blepharidachne kingii</i>	224–7	–
<b>Forb</b>					
3	<b>Perennial</b>			8–27	
	mariposa lily	CALOC	<i>Calochortus</i>	2–7	–
	larkspur	DELPH	<i>Delphinium</i>	2–7	–
	globemallow	SPHAE	<i>Sphaeralcea</i>	2–7	–
	desert princesplume	STPI	<i>Stanleya pinnata</i>	2–7	–
4	<b>Annual</b>			1–12	
	desert needlegrass	ACSP12	<i>Achnatherum speciosum</i>	2–7	–
	threeawn	ARIST	<i>Aristida</i>	2–7	–
	King's eyelashgrass	BLKI	<i>Blepharidachne kingii</i>	2–7	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	2–7	–
<b>Shrub/Vine</b>					
5	<b>Primary Shrubs</b>			155–252	
	spiny menodora	MESP2	<i>Menodora spinescens</i>	118–151	–
	Nevada jointfir	EPNE	<i>Ephedra nevadensis</i>	17–50	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	7–17	–
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	7–17	–
	water jacket	LYAN	<i>Lycium andersonii</i>	7–17	–
6	<b>Secondary Shrubs</b>			30–91	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	3–10	–
	yellow rabbitbrush	CHV18	<i>Chrysothamnus viscidiflorus</i>	3–10	–
	Wiggins' cholla	CYEC3	<i>Cylindropuntia echinocarpa</i>	3–10	–
	Fremont's bushmallow	MAFR2	<i>Malacothamnus fremontii</i>	3–10	–
	grizzlybear pricklypear	OPPOE	<i>Opuntia polyacantha var. erinacea</i>	3–10	–
	desert snowberry	SYLO	<i>Symphoricarpos longiflorus</i>	3–10	–
	littleleaf horsebrush	TEGL	<i>Tetradymia glabrata</i>	3–10	–
	banana yucca	YUBA	<i>Yucca baccata</i>	3–10	–

## Animal community

Livestock Interpretations:

This site is suited to livestock grazing. Grazing management should be keyed to Indian ricegrass production. Indian ricegrass is highly palatable to all classes of livestock in both green and cured condition. It supplies a source of green feed before most other native grasses have produced much new growth. Nevada ephedra is important winter range browse for domestic cattle, sheep and goats.

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:

Mule deer, bighorn sheep, and pronghorn browse Nevada ephedra, especially in spring and late summer when new growth is available. Indian ricegrass is an important forage for several wildlife species.

### Hydrological functions

Runoff is high to very high. Permeability is moderate

### Recreational uses

Aesthetic value is derived from the diverse floral and faunal composition and the colorful flowering of wild flowers and shrubs during the spring and early summer. This site offers rewarding opportunities to photographers and for nature study. This site is used for camping and hiking and has potential for upland and big game hunting.

### Other products

Native Americans used Nevada ephedra as a tea to treat stomach and kidney ailments.

### Other information

Nevada ephedra is useful for erosion control, and seedlings have been successfully planted onto reclaimed strip mines, with survival ranging from 12 to 94%. Atrazine may be effective in controlling Nevada ephedra, though some plants can survive through crown sprouting. Irrigation may increase control by atrazine. Indian ricegrass was traditionally eaten by some Native Americans. The Paiutes used seed as a reserve food source.

### Type locality

Location 1: Lincoln County, NV	
Township/Range/Section	T2S R62E S8
Latitude	37° 47' 4"
Longitude	115° 3' 35"
General legal description	Section 8, T2S. R62E. MDBM. Approximately 2.5 miles south, southwest of White River Narrows and 1.25 miles east of State Highway 318. Lincoln County, Nevada.

### Other references

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

Hood, Sharon M.; Miller, Melanie, editors. 2007. Fire Ecology and Management of the Major Ecosystems of Southern Utah. Gen. Tech. Rep. RMRS-GTR-202. Fort Collins, CO: U.S. Department of agriculture, Forest Service, Rocky Mountain Research Station. 110p.

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

### Contributors

CMJ/PN-E

### 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):**  
\_\_\_\_\_
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):

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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):**
- 

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:**
-