

# Ecological site R030XA076NV UPLAND WASH

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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 ephemeral stream channels of inset fans. Slopes range from 2 to 15 percent, but slope gradients of 2 to 8 percent are most typical. Elevations are about 3000 to 5400 feet.

Please refer to group concept R030XB186CA to view the provisional STM.

### **Associated sites**

R030XA058NV	LIMY 5-7 P.Z.
R030XA073NV	LIMY 3-5 PZ

### Similar sites

R030XA065NV	DRY WASH
	Less productive site

#### Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) Larrea tridentata (2) Ambrosia dumosa
Herbaceous	Not specified

### **Physiographic features**

This site occurs on ephemeral stream channels of inset fans. Slopes range from 2 to 15 percent, but slope gradients of 2 to 8 percent are most typical. Elevations are about 3000 to 5400 feet.

Table 2	Representative	physiographic	features
	. Representative	physiographic	reatures

Landforms	<ul><li>(1) Stream</li><li>(2) Channel</li><li>(3) Inset fan</li></ul>	
Flooding duration	Very brief (4 to 48 hours)	
Flooding frequency	Rare to occasional	
Ponding frequency	None	
Elevation	3,000–5,400 ft	
Slope	2–15%	

# **Climatic features**

This climate is arid, characterized by hot dry summers and cool somewhat moist winters. The average annual precipitation is 5 to 8 inches. Mean annual air temperature is 56 to 65 degrees F. The average growing season is about 160 to 290 days.

### Table 3. Representative climatic features

Frost-free period (average)	290 days
Freeze-free period (average)	
Precipitation total (average)	8 in



Figure 1. Monthly average minimum and maximum temperature

### Influencing water features

This site is intermittently flooded.

### **Soil features**

The soils are very deep, excessively drained soil that have formed in alluvium from mixed rock sources. Textures are moderately coarse sands. Water intake rates are rapid, available water capacity is low, and runoff is negligible to medium. Soil series associated with this site include: Arizo, a sandy-skeletal, mixed, thermic, Typic Torriorthent.

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Surface texture	(1) Very gravelly fine sand
Family particle size	(1) Sandy
Drainage class	Excessively drained
Permeability class	Very rapid
Soil depth	84 in
Surface fragment cover <=3"	26–47%
Surface fragment cover >3"	2–32%
Available water capacity (0-40in)	1.6–2.4 in
Calcium carbonate equivalent (0-40in)	0–5%
Electrical conductivity (0-40in)	0 mmhos/cm

#### Table 4. Representative soil features

Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	7.4–8.2
Subsurface fragment volume <=3" (Depth not specified)	34-44%
Subsurface fragment volume >3" (Depth not specified)	13–14%

# **Ecological dynamics**

Please refer to group concept R030XB186CA to view the provisional STM.

As ecological condition deteriorates, perennial grasses and forbs decrease while creosotebush, rabbitbrush, bladdersage, and white burrobrush become more dominant. Introduced annual forbs and grasses readily invade this site.

Fire Ecology:

The fire return interval for creosotebush communities ranges from 35 to 100 years. Fire kills many cresotebush. Creosotebush may sprout if its root crown is not killed by fire.

# State and transition model

#### Ecosystem states



#### State 1 submodel, plant communities



## State 1 Reference State

# Community 1.1 Reference Plant Community

The reference plant community is dominated by creosotebush and lesser amounts of other shrub species such as white bursage, cattle saltbush, and bladdersage. Potential vegetative composition is about 10% grasses, 10% annual and perennial forbs, and 80% shrubs. Approximate ground cover (basal and crown) is 10 to 20 percent.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	160	320	480
Grass/Grasslike	20	40	60
Forb	20	40	60
Total	200	400	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	Primary Perennial Grasses			8–40	
	Indian ricegrass	ACHY	Achnatherum hymenoides	4–20	-
	desert needlegrass	ACSP12	Achnatherum speciosum	4–20	-
2	Secondary Perennial G	rasses		8–32	
	squirreltail	ELEL5	Elymus elymoides	2–8	-
	basin wildrye	LECI4	Leymus cinereus	2–8	-
	alkali sacaton	SPAI	Sporobolus airoides	2–8	-
3	Other Annual Grasses	<u>.</u>		1–12	
Forb				· · · · · · · · · · · · · · · · · · ·	
4	Perennial Forbs			8–32	
5	Annual Forbs			1–32	
Shrub/	Vine			· · · · · · · · · · · · · · · · · · ·	
6	Primary shrubs		164–320		
	creosote bush	LATR2	Larrea tridentata	60–100	-
	burrobush	AMDU2	Ambrosia dumosa	20–40	-
	cattle saltbush	ATPO	Atriplex polycarpa	20–40	-
	burrobrush	HYSA	Hymenoclea salsola	20–40	_
	Nevada dalea	PSPO	Psorothamnus polydenius	20–40	_
	Mexican bladdersage	SAME	Salazaria mexicana	20–40	_
	desert-thorn	LYCIU	Lycium	4–20	_
7	Secondary shrubs	<u>.</u>		15–53	
	fourwing saltbush	ATCA2	Atriplex canescens	4–20	_
	baccharis	BACCH	Baccharis	4–20	_
	Nevada jointfir	EPNE	Ephedra nevadensis	4–20	-
	Mojave rabbitbrush	ERPA29	Ericameria paniculata	4–20	-
	screwbean mesquite	PRPU	Prosopis pubescens	4–20	-

# **Animal community**

Livestock Interpretations:

Many animals bed in or under creosotebush. Domestic sheep dig shallow beds under creosotebush because it provides the only shade in the desert scrub community. Creosotebush is unpalatable to livestock and most browsing wildlife. Consumption of creosotebush may be fatal to sheep.

White bursage is an important browse species in several areas of the Mojave Desert. Browsing pressure on white bursage is particularly heavy during years of low precipitation, when production of winter annuals is low.

Indian ricegrass has good forage value for domestic sheep, cattle, and horses. It can be important cattle forage in winter, particularly in salt-desert communities. Indian ricegrass is often used most heavily in late winter, when succulent and nutritious new green leaves are produced.

Wildlife Interpretations:

## **Other products**

Creosotebush has been highly valued for its medicinal properties by desert peoples. It has been used to treat at least 14 illnesses.

Twigs and leaves may be boiled as tea, steamed, pounded into a powder, pressed into a poultice, or heated into an infusion.

Indian ricegrass seeds make a gluten-free, nutritious flour with a potentially good market. Indian ricegrass was traditionally eaten by some Native American peoples. The Paiutes used seed as a reserve food source.

# Other information

Creosotebush may be used to rehabilitate disturbed environments in southwestern deserts. Once established, creosotebush may improve sites for annuals that grow under its canopy by trapping fine soil, organic matter, and symbiont propagules. It may also increase water infiltration and storage.

White bursage is a host for sandfood (Pholisma sonorae), a parasitic plant with a sweet, succulent, subterranean flowerstalk. Sandfood was a valuable food supply for desert peoples

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

Indian ricegrass is well-suited for surface erosion control and desert revegetation although it is not highly effective in controlling sand movement. Certain native ecotypes exhibit desirable characteristics such as drought and salinity tolerance, low seed dormancy, and good nutritional qualities.

### **Type locality**

Location 1: Nye County, NV			
Township/Range/Section T13 R48 S31			
General legal description About 12 air miles southeast of Beatty, Crater Flat area, Nye County, Neva			

### Other references

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

# Contributors

HA

### Approval

Kendra Moseley, 2/18/2025

### 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)	P NOVAK-ECHENIQUE
Contact for lead author	State Rangeland Management Specialist
Date	07/20/2012
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- 1. Number and extent of rills: Rills are none to rare.
- 2. Presence of water flow patterns: Water flow patterns are few to common, especially after summer convection storms and spring runoff. Water flow patterns are connected and long (> 5 ft).
- 3. Number and height of erosional pedestals or terracettes: Pedestals are rare to few with occurrence typically limited to areas within water flow patterns.
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground): Bare Ground up to 20% depending on amount of surface rock fragments.
- 5. Number of gullies and erosion associated with gullies: None
- 6. Extent of wind scoured, blowouts and/or depositional areas: None
- 7. Amount of litter movement (describe size and distance expected to travel): Fine litter (foliage from grasses and annual & perennial forbs) expected to move distance of slope length during intense summer convection storms or rapid snowmelt events. Persistent litter (large woody material) will remain in place except during large rainfall events.
- 8. Soil surface (top few mm) resistance to erosion (stability values are averages most sites will show a range of values): Soil stability values should be 1 to 4 on most soil textures found on this site. (To be field tested.)
- Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Surface structure is typically weak coarse platy. Soil surface colors are light grays and soils are typified by an ochric epipedon. Organic matter of the surface 2 to 3 inches is less than 1 percent.

- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff: Sparse shrub canopy and associated litter provide some protection from raindrop impact.
- 11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None
- 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: Mojave Desert shrubs

Sub-dominant: cool-season, perennial bunchgrasses > perennial forbs > annual forbs > warm-season, perennial bunchgrasses > annual grasses

Other: succulents

Additional:

- Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Dead branches within individual shrubs common and standing dead shrub canopy material may be as much as 25% of total woody canopy; mature bunchgrasses commonly (±25%) have dead centers.
- 14. Average percent litter cover (%) and depth ( in): Between plant interspaces and under shrubs up to 25% and depth (<<sup>1</sup>/<sub>4</sub>-inch).
- Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production): For normal or average growing season ±400 lbs/ac. Favorable years ± 600 lbs/ac and unfavorable years ± 200 lbs/ac
- 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: Potential invaders on this site include red brome, Mediterranean grass, salt cedar, mustards, and redstem filaree.
- 17. **Perennial plant reproductive capability:** All functional groups should reproduce in average and above-average growing season years. Little reproduction or growth occurs in extreme or extended drought periods.