

Ecological site R030XB060NV GRANITIC NORTH SLOPE 5-7 P.Z.

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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 hills and mountain sideslopes having a northerly aspect. Slopes range from 8 to 75 percent, but slope gradients of 15 to 50 percent are typical. Elevations are 3000 to about 4500 feet. The soils associated with this site are 30 to 40 inches and have formed in residuum or colluvium from granitic (gneiss or schist) or quartzite parent material. Please refer to group concept R030XB076NV to view the provisional STM.

Associated sites

R030XA061NV	LOAMY 5-7 P.Z.
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Similar sites

R030XB087NV	GRANITIC SLOPE 5-7 P.Z. CAAR10 and MESP2 codominant shrubs with AMDU2
R030XB062NV	GRANITIC SLOPE 3-5 P.Z. AMDU2-KRPA codominant shrubs; less productive site
R030XB008NV	SHALLOW GRANITIC HILL 5-7 P.Z. Less productive site

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Eriogonum fasciculatum</i> var. <i>polifolium</i> (2) <i>Ephedra</i>
Herbaceous	(1) <i>Pleuraphis rigida</i>

Physiographic features

This site occurs on hills and mountain sideslopes having a northerly aspect. Slopes range from 8 to 75 percent, but slope gradients of 15 to 50 percent are typical. Elevations are 3000 to about 4500 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope (2) Hill
Elevation	910 – 1,370 m
Slope	20 – 50 %
Aspect	N

Climatic features

The climate is hot and arid with warm, moist winters and hot, dry summers. Average annual precipitation is about 5 to 7 inches. Mean annual air temperature is 60 to 68 degrees F. The average growing season is about 180 to 290 days.

Table 3 Representative climatic features

Frost-free period (average)	290 days
Freeze-free period (average)	
Precipitation total (average)	180 mm

Influencing water features

There are no influencing water features associated with this site.

Soil features

The soils associated with this site are 30 to 40 inches and have formed in residuum or colluvium from granitic (gneiss or schist) or quartzite parent material. Surface soils are typically medium to moderately coarse textured. Water intake rate is moderately slow and available water capacity is low. Runoff is very high and the soils are well drained. The soil series associated with this site include Highland.

Table 4. Representative soil features

Parent material	(1) Residuum – gneiss (2) Colluvium – schist
Surface texture	(1) Extremely gravelly sandy loam
Family particle size	(1) Loamy

Drainage class	Well drained
Permeability class	Moderately slow
Soil depth	80 – 100 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	8.13 – 8.38 cm
Calcium carbonate equivalent (0-101.6cm)	0 – 10 %
Electrical conductivity (0-101.6cm)	Not specified
Sodium adsorption ratio (0-101.6cm)	0 – 10
Soil reaction (1:1 water) (0-101.6cm)	7.9 – 8.4
Subsurface fragment volume <=3" (Depth not specified)	40 – 60 %
Subsurface fragment volume >3" (Depth not specified)	0 – 20 %

Ecological dynamics

Please refer to group concept R030XB076NV to view the provisional STM.

As ecological condition deteriorates, creosotebush and Mojave buckwheat increase as perennial grasses decrease. Species likely to invade this site are annual forbs and grasses such filaree and red brome. Concave to gently sloping straight slopes, have a greater proportion of big galleta than is typical for the site.

Fire Ecology:

The fire return interval for Mojave buckwheat communities occurs at approximate 28-year intervals. Damage to big galleta from fire varies. If big galleta is dry, damage may be severe. However, when plants are green, fire will tend to be less severe and damage may be minimal, with big galleta recovering quickly. Ephedra generally sprouts vigorously from the roots or woody root crown after fire and rapidly produces aboveground biomass from surviving meristematic tissue.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	Primary Perennial Grasses			316-504	
	big galleta	PLRI3	<i>Pleuraphis rigida</i>	269-336	—
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	34-101	—
	desert needlegrass	ACSP12	<i>Achnatherum speciosum</i>	13-67	
2	Secondary Perennial Grasses			1-34	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	3-13	—
	threeawn	ARIST	<i>Aristida</i>	3-13	—
	low woollygrass	DAPU7	<i>Dasyochloa pulchella</i>	3-13	—
Forb					
3	Perennial			13-54	
	desert needlegrass	ACSP12	<i>Achnatherum speciosum</i>	13-67	—
	desert marigold	BAMU	<i>Baileya multiradiata</i>	3-20	—
	desert globemallow	SPAM2	<i>Sphaeralcea ambigua</i>	3-20	—
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	3-13	—
4	Annual			1-15	
Shrub/Vine					
5	Primary shrubs			82-256	
	Eastern Mojave buckwheat	ERFAP	<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	34-101	—
	burrobush	AMDU2	<i>Ambrosia dumosa</i>	1-54	—
	California jointfir	EPCA2	<i>Ephedra californica</i>	11-22	—
	Nevada jointfir	EPNE	<i>Ephedra nevadensis</i>	11-22	—
	Torrey's jointfir	EPTO	<i>Ephedra torreyana</i>	11-22	—
6	Secondary shrubs			34-101	
	Virgin River brittlebush	ENVI	<i>Encelia virginensis</i>	7-20	—
	California barrel cactus	FECY	<i>Ferocactus cylindraceus</i>	7-20	—
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	7-20	—
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	7-20	—
	creosote bush	LATR2	<i>Larrea tridentata</i>	7-20	—
	whitestem paperflower	PSCO2	<i>Psilostrophe cooperi</i>	7-20	—
	Mojave woodyaster	XYTO2	<i>Xylorhiza tortifolia</i>	7-20	—
	Joshua tree	YUBR	<i>Yucca brevifolia</i>	7-20	—
	Mojave yucca	YUSC2	<i>Yucca schidigera</i>	7-20	—

Animal community

Livestock Interpretations: This site is suited to livestock grazing. Grazing management should be keyed to Big galleta grass production. Big galleta is considered a valuable forage plant for cattle and domestic sheep. Its coarse, rigid culms make it relatively resistant to heavy grazing and trampling. Ephedra is heavily browsed by livestock on winter range but only moderately or lightly browsed during other seasons. Mojave buckwheat is also an important forage species for several livestock species. 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: Ephedra is an important browse species for big game animals. Green ephedra is heavily used by wildlife on winter ranges. Mojave buckwheat and Big Galleta are important forage species for several wildlife species.

Hydrological functions

Unoff is very high.

Other information

Big galleta's clumped growth form stabilizes blowing sand. Green ephedra is listed as a successful shrub for restoring western rangeland communities and can be used to rehabilitate disturbed lands. It also has value for reducing soil erosion on both clay and sandy soils. Green ephedra establishes readily through direct seeding, transplants, and stem cuttings.

Type locality

Location 1: Clark County, NV	
Township/Range/Section	T25S R62E S19
General legal description	Section 19, T25S. R62E. MDBM. McCullough Pass area. North-facing sideslopes on the west side of McCullough Range, 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

Kendra Moseley, 3/11/2025

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	09/16/2026

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):

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:

17. Perennial plant reproductive capability:
