

Ecological site R030XC322AZ

Sandy Wash

10-13" p.z.

Last updated: 10/21/2024
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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.

MLRA notes

Major Land Resource Area (MLRA): 030X–Mojave Basin and Range

This unit occurs within the Basin and Range Province and is characterized by broad basins, valleys, and old lakebeds. Widely spaced mountains trending north to south occur throughout the area. Isolated, short mountain ranges are separated by an aggraded desert plain. The mountains are fault blocks that have been tilted up. Long alluvial fans coalesce with dry lakebeds between some of the ranges.

LRU notes

AZ LRU 30-3 – Upper Mohave Desert Elevations range from 2800 to 4500 feet and precipitation averages 9 to 12 inches per year. Vegetation includes Joshua tree, blackbrush, creosotebush, ratany, bush muhly, big galleta, black grama, desert needlegrass, and Indian ricegrass. The soil temperature regime is thermic and the soil moisture regime is typic aridic.

Ecological site concept

This ecological site occurs in bottoms along ephemeral washes.

Associated sites

R030XC313AZ	Limy Upland 10-13" p.z. Deep
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Acacia greggii</i> (2) <i>Hymenoclea salsola</i>
Herbaceous	(1) <i>Muhlenbergia porteri</i>

Physiographic features

This ecological site is found in a "bottom" position on low areas within the floodplain of ephemeral washes and drainageways. It receives additional run-in moisture from adjacent ecological sites.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Wash
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	Rare to occasional
Ponding frequency	None to rare
Elevation	730 – 1,220 m
Slope	0 %
Aspect	Aspect is not a significant factor

Climatic features

The climate is arid and warm. Annual precipitation ranges from 10 to 13 inches. About 65 percent of the rainfall comes from October through May as gentle rain from Pacific storms which may last for a couple of days. The rest of the rainfall comes during the summer monsoon season from July through September as spotty, brief, intense thunderstorms. Snow rarely falls, and only remains on the ground a few hours at most. Annual air temperature ranges from 46 to 76 degrees F. The average frost-free period ranges from 121 to 231 days.

Table 3 Representative climatic features

Frost-free period (average)	230 days
Freeze-free period (average)	270 days
Precipitation total (average)	330 mm

Influencing water features

Soil features

The soil of this ecological site is very deep with surface textures of extremely gravelly sand, gravelly loamy sand, gravelly fine sandy loam and gravelly sandy loam. Subsoil textures are extremely gravelly sand, gravelly loamy sand, gravelly fine sandy loam and gravelly sandy loam. Soil parent material is alluvium from granite & limestone. Soil available water capacity is low to high. The soil's erosion hazard by water is severe and by wind is slight to severe. The soil is non-saline, non-sodic with mildly to moderately alkaline pH (7.4-8.4). The soil moisture regime is typic aridic and temperature regime is thermic.

A typical soil profile is:

A-0 to 2 inches; gravelly sandy loam

C1-2 to 10 inches; sandy loam

C2-10 to 19 inches; gravelly sandy loam

C3-19 to 31 inches; gravelly sandy loam

C4-31 to 41 inches; gravelly coarse sandy loam

C5-41 to 60 inches; very gravelly loamy sand

Taxonomic classifications include Sandy-skeletal, mixed, thermic Typic Torriorthents; Coarse-loamy, mixed, superactive, calcareous, thermic Typic Torrifluvents.

Soil map units correlated to this ecological site include 623064, Torriorthents soil, Shivwits Area, AZ, SSA; 697008; 697069, Arizo and Ireteba family soils, Mohave County, AZ, Central Part SSA; 627065, Ireteba family soils, Mohave County, AZ, Southern Part SSA.

Table 4. Representative soil features

Parent material	(1) Alluvium – granite
Surface texture	(1) Extremely gravelly sand (2) Gravelly loamy sand (3) Gravelly fine sandy loam
Family particle size	(1) Sandy
Drainage class	Poorly drained to excessively drained
Permeability class	Slow to rapid
Soil depth	150 cm
Surface fragment cover <=3"	20 – 50 %
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	10.67 – 16.51 cm
Calcium carbonate equivalent (0-101.6cm)	0 – 10 %
Electrical conductivity (0-101.6cm)	Not specified
Sodium adsorption ratio (0-101.6cm)	Not specified

Soil reaction (1:1 water) (0-101.6cm)	7.9 – 8.4
Subsurface fragment volume <=3" (Depth not specified)	0 – 70 %
Subsurface fragment volume >3" (Depth not specified)	Not specified

Ecological dynamics

Sandy Wash, 10"-13" p.z., is a shrub dominated ecological site with a scattered understory restricted to protected areas. Plant community receives additional moisture from run-on events. Annual forbs and grasses flourish following rainfall. Other than flash flooding, natural disturbances are rare. After introduction of non-native annuals (forbs and/or grasses), the shift in total productivity is shift increased seasonal herbaceous production following periods of rain. Dominant shrubs are creosote and white bursage. Assorted half-shrubs are widely scattered.

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				28-56	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	28-56	–
2				6-28	
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	6-28	–
3				6-28	
	big galleta	PLRI3	<i>Pleuraphis rigida</i>	6-28	–
4				6-28	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	6-28	–
5				6-28	
	Grass, perennial	2GP	<i>Grass, perennial</i>	6-28	–
6				0-11	
	Grass, annual	2GA	<i>Grass, annual</i>	0-11	–
Forb					
7				6-17	
	desert globemallow	SPAM2	<i>Sphaeralcea ambigua</i>	6-17	–
8				6-17	
	Forb, perennial	2FP	<i>Forb, perennial</i>	6-17	–
9				6-22	
	Forb, annual	2FA	<i>Forb, annual</i>	6-22	–
Shrub/Vine					
10				84-140	
	catclaw acacia	ACGR	<i>Acacia greggii</i>	84-140	–

11				84-140	
	burrobrush	HYSA	<i>Hymenoclea salsola</i>	84-140	–
12				6-28	
	woolly fruit bur ragweed	AMER	<i>Ambrosia eriocentra</i>	6-28	–
13				6-17	
	buckhorn cholla	CYACM	<i>Cylindropuntia acanthocarpa var. major</i>	6-17	–
14				6-17	
	rayless goldenhead	ACSP	<i>Acamptopappus sphaerocephalus</i>	6-17	–
15				6-17	
	Mexican bladdersage	SAME	<i>Salazaria mexicana</i>	6-17	–
16				0-11	
	creosote bush	LATR2	<i>Larrea tridentata</i>	0-11	–
17				0-11	
	tulip pricklypear	OPPH	<i>Opuntia phaeacantha</i>	0-11	–
18				0-11	
	banana yucca	YUBA	<i>Yucca baccata</i>	0-11	–
19				0-11	
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	0-11	–
20				0-6	
	water jacket	LYAN	<i>Lycium andersonii</i>	0-6	–
21				6-28	
	Shrub, broadleaf	2SB	<i>Shrub, broadleaf</i>	0-28	–
	white ratany	KRGR	<i>Krameria grayi</i>	0-28	–
	desert almond	PRFA	<i>Prunus fasciculata</i>	0-28	–

Table 6. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Contributors

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Approval

Kendra Moseley, 10/21/2024

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)	
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Contact for lead author	
Date	08/30/2026
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:
