Ecological site R030XA112AZ
Sandy Terrace 3-6" 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.

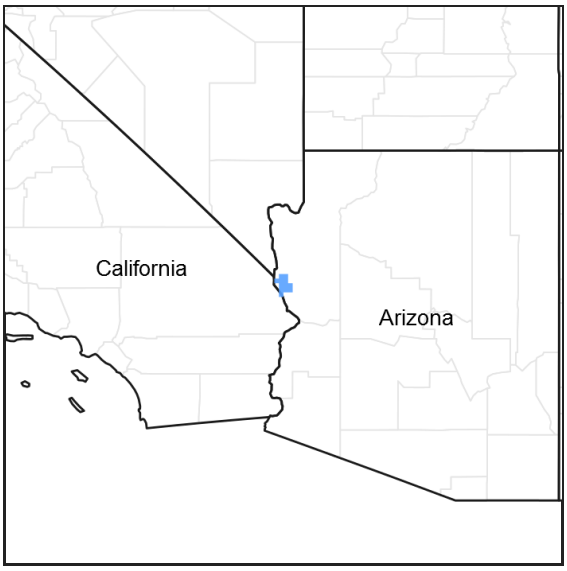


Figure 1. Mapped extent

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.

MLRA notes

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

AZ CRA 30.1 – Lower Mohave Desert

Elevations range from 400 to 2500 feet and precipitation averages 3 to 6 inches per year. Vegetation includes creosotebush, white bursage, Mormon tea, and brittlebush. The soil temperature regime is hyperthermic and the soil moisture regime is typic aridic. 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.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Acacia greggii* (2) *Larrea tridentata*
Herbaceous	Not specified

Physiographic features

This desert tree and shrub site occurs on the upper stream terraces along the drainageways of intermittent and perennial streams, outside the active and bank-full channel. It benefits occasionally from extra moisture received as over-bank flooding and runoff from adjacent upland sites and from a fluctuating water table that can be reached by deeper-rooted species.

Table 2. Representative physiographic features

Landforms	(1) Stream terrace
Flooding duration	Brief (2 to 7 days)
Flooding frequency	Rare
Ponding frequency	None
Elevation	122–457 m
Slope	0–2%
Ponding depth	0 cm
Aspect	Aspect is not a significant factor

Climatic features

The 30-1AZ Lower Mohave Desert Shrub land resource unit is characterized by a hot, dry climate. The average annual rainfall is 3 to 6 inches, but it can be extremely variable (e.g. from 0 to 11 inches). There can be long periods when little or no precipitation is received. Most of the precipitation for the year could arrive in just a couple of storms. The soil moisture regime is typic aridic and the soil temperature regime is hyperthermic. Winter precipitation from November through April occurs as gentle rains from storms coming out of the Pacific Ocean. Snow is very rare and only falls in the highest mountains. A seasonal drought occurs in May and June. Summer/fall precipitation from July through October comes from spotty, unreliable, and sometimes violent thunderstorms. The moisture originates in the Gulf of Mexico (and the Pacific Ocean in the fall) and flows into the state on the north end of the Mexican monsoon. Strong winds are common, especially during the spring.

Table 3. Representative climatic features

Frost-free period (average)	325 days
Freeze-free period (average)	365 days
Precipitation total (average)	152 mm

Influencing water features

Soil features

The moisture regime is typic aridic. Temperature regime is hyperthermic. Subsoil textures are stony and/or extremely gravelly loamy coarse sand. Soils are slightly-strongly effervescent and slightly to moderately alkaline. Wind and water erosion hazards are slight. Runoff is very slow. Plant-soil moisture relationship: soil profile holds very little water because of texture - water table reachable by deeper-rooted species.

A typical soil profile is:
A-0 to 1 inches; extremely gravelly loamy sand
C1-1 to 23 inches; extremely gravlly loamy sand
C2-23 to 60 inches; extremely gravelly sand

This ecological site has been correlated to map units 627021 and 627022, Carrizon Series in the Mohave County, AZ, Southern Part SSA and map units 701089, Oxyaquic Torriorthents, and 701144, Typic Torrifluvents, in the Grand Canyon Area, AZ, Parts of Coconino and Mohave Counties SSA

Table 4. Representative soil features

Surface texture	(1) Very gravelly sandy clay loam (2) Stony
Family particle size	(1) Sandy
Drainage class	Excessively drained
Permeability class	Moderately rapid to very rapid
Soil depth	102–152 cm
Surface fragment cover <=3"	25–40%
Surface fragment cover >3"	0–40%
Available water capacity (0-101.6cm)	1.52–7.11 cm
Calcium carbonate equivalent (0-101.6cm)	7–8%
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	0
Soil reaction (1:1 water) (0-101.6cm)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	5–90%
Subsurface fragment volume >3" (Depth not specified)	0–70%

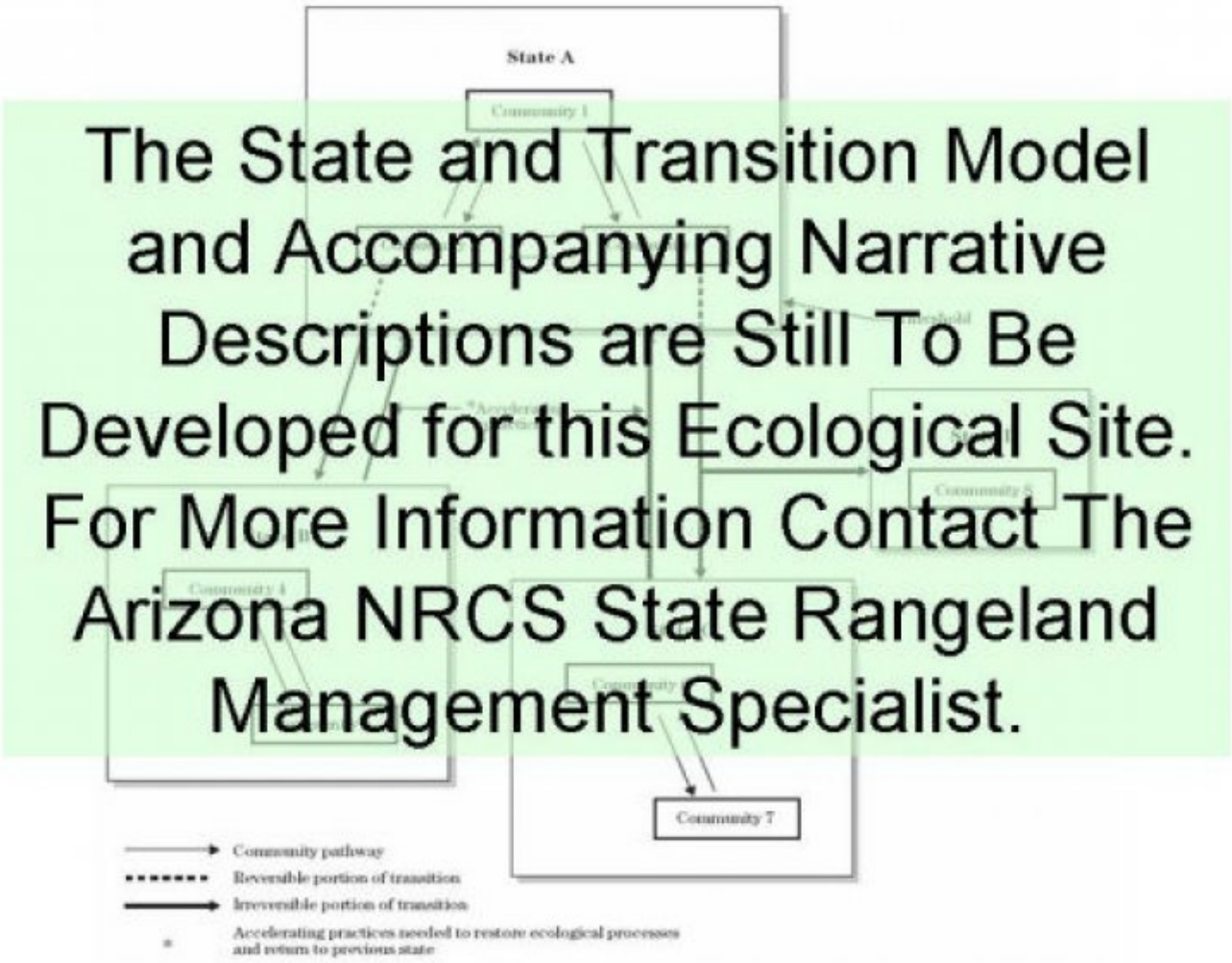
Ecological dynamics

The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The historical climax plant community represents the natural potential plant communities found on relict or relatively undisturbed sites. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as grazing, fire, or drought.

Production data provided in this site description is standardized to air-dry weight at the end of the summer growing season. The plant communities described in this site description are based on near normal rainfall years.

NRCS uses a Similarity Index to compare existing plant communities to the plant communities described here. Similarity Index is determined by comparing the production and composition of a plant community to the production and composition of a plant community described in this site description. To determine Similarity Index, compare the production (air-dry weight) of each species to that shown in the plant community description. For each species, count no more than the maximum amount shown for the species, and for each group, count no more than the maximum shown for the group. Divide the resulting total by the total normal year production shown in the plant community description. If rainfall has been significantly above or below normal, use the total production shown for above or below normal years. If field data is not collected at the end of the summer growing season, then the field data must be corrected to the end of the year production before comparing it to the site description. The growth curve can be used as a guide for estimating production at the end of the summer growing season.

State and transition model



The State and Transition Model and Accompanying Narrative Descriptions are Still To Be Developed for this Ecological Site. For More Information Contact The Arizona NRCS State Rangeland Management Specialist.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

This is a mixed desert tree and shrub site with a canopy cover of 10-15%. Mesquite and desert willow are the dominant tree species, while catclaw acacia is the major shrub. Under the trees and shrubs, annual grasses and forbs can be significant if winter rains are favorable. Typical plant spacing is 3.5-4.5 feet. At the edge of this site where terraces meet the uplands, usually steep slopes, the site tends to be shrub-dominated and resembles a typical wash site. Trees become thicker close to the stream channel and where the water table is closest to the surface. Most of the annual grasses and forbs are introduced species, such as red brome, Mediterranean grass and mustards.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	353	448	504
Tree	252	392	504
Grass/Grasslike	10	140	151
Forb	10	28	50
Total	**625**	**1008**	**1209**

Figure 4. Plant community growth curve (percent production by month). AZ3011, 30.1 3-6" p.z. all sites. Growth begins in late winter, most growth occurs in the spring..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	7	30	32	13	7	3	5	2	1	0	0

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1				10–151	
	Grass, annual	2GA	*Grass, annual*	10–151	–
Forb					
2	**Annual Forbs**			10–50	
	Forb, annual	2FA	*Forb, annual*	3–17	–
	fiddleneck	AMSIN	*Amsinckia*	3–17	–
	mustard	BRASS2	*Brassica*	3–17	–
	Mojave desertstar	MOBE2	*Monoptilon bellioides*	3–17	–
3	**Perennial Forbs**			0–10	
	Forb, perennial	2FP	*Forb, perennial*	0–3	–
	desert marigold	BAMU	*Baileya multiradiata*	0–3	–
	desert trumpet	ERIN4	*Eriogonum inflatum*	0–3	–
	pepperweed	LEPID	*Lepidium*	0–3	–
	desert globemallow	SPAM2	*Sphaeralcea ambigua*	0–3	–
Shrub/Vine					
4				252–353	
	catclaw acacia	ACGR	*Acacia greggii*	252–353	–
5				50–151	
	creosote bush	LATR2	*Larrea tridentata*	50–151	–
6				50–101	
	burrobrush	HYSA	*Hymenoclea salsola*	50–101	–
7				6–10	
	Shrub, other	2S	*Shrub, other*	6–10	–
	burrobush	AMDU2	*Ambrosia dumosa*	6–10	–
Tree					
8				151–303	
	western honey mesquite	PRGLT	*Prosopis glandulosa var. torreyana*	151–303	–
9				101–202	
	desert willow	CHLI2	*Chilopsis linearis*	101–202	–

Animal community

This site is adjacent to intermittent or perennial water and may be heavily used for shade and cover. Forage is limited to annuals, with some use of mesquite and catclaw.

The site provides excellent nesting habitat and cover for dove, quail, and other non-game birds, as well as providing a variety of preferred foods. It is adjacent to a water source for all animals.

Potential species include:
great horned owl; mourning dove; song sparrow; Gambel's quail; Mexican free-tailed bat, gopher snake, zebra-tailed lizard; Mohave rattlesnake; western whiptail; common kingsnake, kit fox; round-tailed ground squirrel; coyote; mountain lion; chuckwalla; ferral burro.

Recreational uses

The main activities are hunting and bird watching. This site provides a striking contrast to the surrounding desert.

Inventory data references

To date, this site has only been described in one location, at 1500 feet.

Type locality

Location 1: Mohave County, AZ	
Township/Range/Section	T33N R16W S13
General legal description	Lake Mead National Recreation Area, just below Tassi Spring: Gyp Hills 7.5 minute Quad

Contributors

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Unknown

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:**

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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):**

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:**