USDA Natural Resources
Conservation Service

Ecological site R030XA125AZ
Sandy Bottom 3-6" p.z. Wet

Last updated: 2/18/2025
Accessed: 12/10/2025

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

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.

Ecological site concept

This desert tree and shrub ecological site occurs in a bottom position on the lower stream terraces along intermittent and perennial streams, inside the active or bank-full channel. Surface water is generally present and the water table is just below the surface.

Associated sites

R030XA115AZ	**Sandy Wash 3-6" p.z.** Sandy Wash, 3-6
R030XA104AZ	**Granitic Hills 3-6" p.z.** Granitic Hills, 3-6: P.Z.

R030XA107AZ	**Limy Slopes 3-6" p.z.** Limy Slopes, 3-6
R030XA112AZ	**Sandy Terrace 3-6" p.z.** Sandy Terrace, 3-6

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Baccharis salicifolia* (2) *Baccharis sarothroides*
Herbaceous	Not specified

Physiographic features

This desert tree and shrub ecological site occurs in a bottom position on the lower stream terraces along intermittent and perennial streams, inside the active or bank-full channel. Surface water is generally present and the water table is just below the surface.

Table 2. Representative physiographic features

Landforms	(1) Stream terrace
Flooding duration	Brief (2 to 7 days)
Flooding frequency	Occasional to frequent
Ponding duration	Very brief (4 to 48 hours) to brief (2 to 7 days)
Ponding frequency	Rare to occasional
Elevation	122–457 m
Slope	0–2%
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

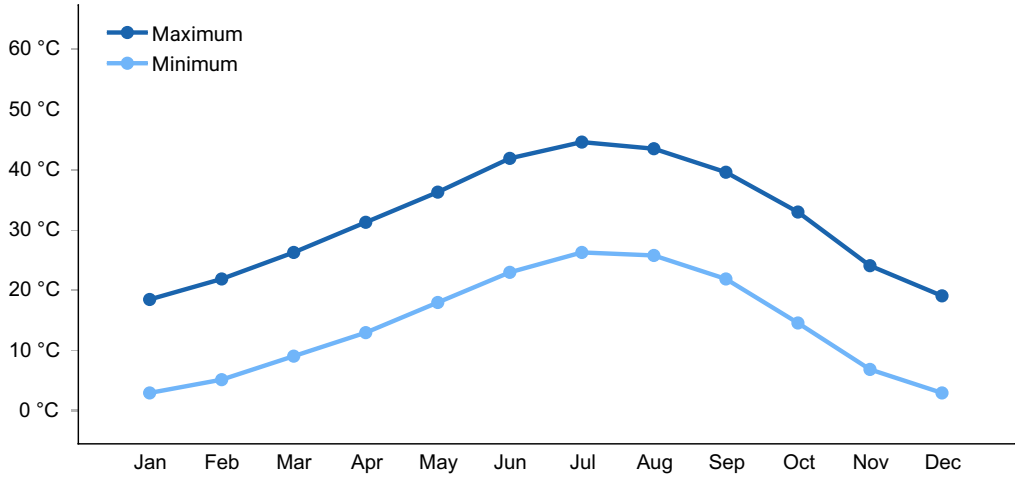


Figure 1. Monthly average minimum and maximum temperature

Influencing water features

Site occasional receives extra runoff as it is in a bottom posistion.

Soil features

The moisture regime of soils associated witht this ecological site is typic aridic; the temperature regime is hyperthermic. Geologic parent material is mixed alluvium. The soil is slightly to strongly effervescent.

Table 4. Representative soil features

Surface texture	(1) Very cobbly sandy loam (2) Gravelly
Family particle size	(1) Sandy
Drainage class	Poorly drained
Permeability class	Very rapid
Soil depth	0–25 cm
Surface fragment cover <=3"	5–15%

Surface fragment cover >3"	50–70%
Available water capacity (0-101.6cm)	1.52–7.11 cm
Electrical conductivity (0-101.6cm)	0–2 mmhos/cm
Soil reaction (1:1 water) (0-101.6cm)	7.4–8.4
Subsurface fragment volume <=3" (Depth not specified)	5–60%
Subsurface fragment volume >3" (Depth not specified)	0–70%

Ecological dynamics

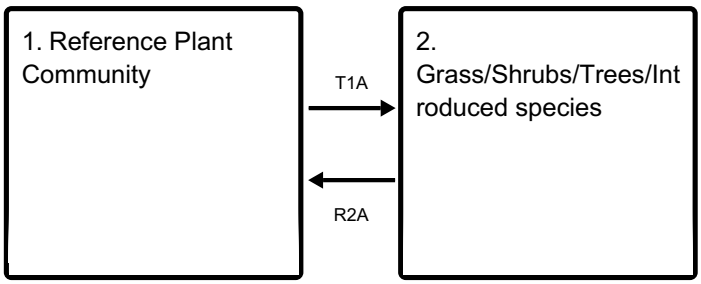
The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The historical climax plant community represents the natural potential plant communities found on relict or 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.

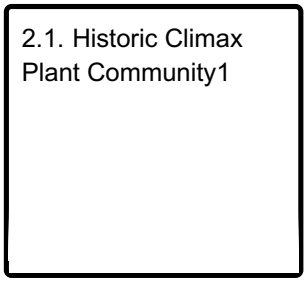
NRCS uses a Similarity Index to compare existing plant communities to the plant communities described here. Similarity Index is determined by comparing the production and composition of a plant community to the production and composition of a plant community described in this site description. To determine 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

Ecosystem states



State 2 submodel, plant communities



State 1
Reference Plant Community

In the reference plant community there are a variety of rushes and sedges mixed with hydrophytic forbs and shrubs along the water edge and forming a narrow corridor of riparian vegetation within the normal bank-full channel. Catclaw, mesquite, willow and cottonwood would signal the transition to the upper terraces of the channel and the sandy bottom ecological site.

State 2
Grass/Shrubs/Trees/Introduced species

This plant community is dominated by a mixture of annual grasses and shrubs, with a variety of forbs and a scattering of trees. Seepwillow and desert broom dominate the shrub component while desert willow, mesquite , and cotonwood provide some canopy. Grasses found in the plant community are mainly annuals and are introduced species such as red brome, bermudagrass, and rabbitsfoot grass. Much of the forb component is hydrophytic - cattail, cheeseweed, and watercress.

Community 2.1
Historic Climax Plant Community1

In the historic climax plant community there probably were a variety of rushes and sedges mixed with hydrophytic forbs and shrubs along the water edge and forming a narrow corridor of riparian vegetation within the normal bank-full channel. Catclaw, mesquite, willow and cottonwood would signal the transition to the upper terraces of the cahnnel and the sandy bottom ecological site.

Transition T1A
State 1 to 2

Invasion of introduced annuals

Restoration pathway R2A
State 2 to 1

Once introduced annuals there is no certain restoration to reference.

Additional community tables

Animal community

This site is used for forage, water and cover. Good management and prescribed grazing are essential for this site and will allow the plant community to move toward its historic potential.

Wildlife found on this site include the great horned owl, mourning dove, gopher snake, zebra-tailed lizard, kit fox, round-tailed ground squirrel, song sparrow, Mohave rattlesnake, western whiptail, coyote, mountain lion, Gambel's quail, common kingsnake, chuckwalla, feral burro, and Mexican free-tailed bat.

This is not a favorable site for tortoise habitat, but surrounding sites may be. The Mohave desert tortoise is a threatened species.

Recreational uses

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

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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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	12/10/2025
Approved by	Kendra Moseley
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):**

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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):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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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:**
