Ecological site R030XA111AZ
Saline Bottom 3-6" p.z.

Last updated: 2/18/2025
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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 30-1 – 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.

Ecological site concept

This ecological site is located in bottom positions. Soils are sandy loam with high soluble salt content.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This range site occurs in a bottom position. It benefits significantly from run-in moisture from adjacent areas. It occurs on all exposures; usually occurring on floodplains along the Colorado River.

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Elevation	122–457 m
Slope	0–1%

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

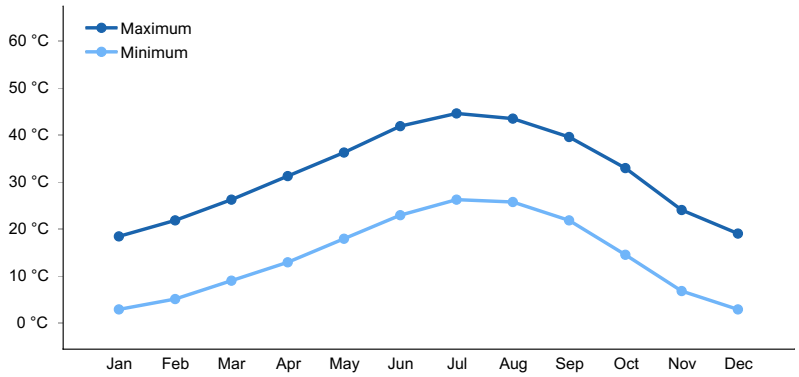


Figure 1. Monthly average minimum and maximum temperature

Influencing water features

Soil features

Soluble salt accumulations are high and pH ranges from 7.9-8.4. With good vegetative cover, infiltration rates are moderate. Stability against erosion process are moderate. Plant-soil moisture relationships are poor due to high content of soluble salt. The soil contains less than 15% coarse fragments throughout the profile.

Table 4. Representative soil features

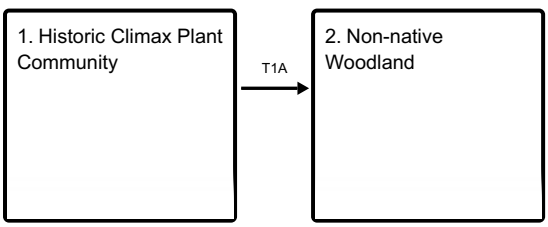
Permeability class	Moderate to slow

Ecological dynamics

Saline Bottom, 3"-6" p.z., is a tree and shrub dominated ecological site. Non-native salt cedar trees are naturalized to the site.

State and transition model

Ecosystem states



State 1 submodel, plant communities

1.1. Historic Climax Plant Community

State 2 submodel, plant communities

2.1. Salt Cedar-Mesquite Thicket

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

The plant community on this site is limited to salt tolerant vegetation. Major man-made alterations along the Colorado River have greatly changed the plant community that was once climax to this site. The plant community that occurred along the free-flowing river was altered by the construction of flood control and Hydro-electric dams. Large acreages on this site have been further altered by irrigation of the site or adjacent sites which changed water table depths and salt accumulations within the soils. These major changes in the physical properties of the soils allowed the dramatic increases of salt-tolerant plants or the invasion of naturalized salt-tolerant plants into this environment.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	2662	–	2802
Forb	–	–	140
Grass/Grasslike	–	–	84
Total	**2662**	**–**	**3026**

State 2
Non-native Woodland

Community 2.1
Salt Cedar-Mesquite Thicket

This plant community is a dense stand of salt cedar and mesquite trees.

Transition T1A
State 1 to 2

Introduction of non-native tree seed and propagules.

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				0–84	
	Grass, annual	2GA	*Grass, annual*	0–84	–
Forb					
2				0–140	
	Forb, annual	2FA	*Forb, annual*	0–140	–
Shrub/Vine					
3				0–2242	
	arrowweed	PLSE	*Pluchea sericea*	0–2242	–
4				0–1961	
	honey mesquite	PRGL2	*Prosopis glandulosa*	0–1961	–

Contributors

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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)	
Contact for lead author	
Date	05/13/2025
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):**

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):

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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:**
