

Ecological site R030XD132CA

Saline Flat

Last updated: 2/25/2025
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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

The Mojave Desert Major Land Resource Area (MLRA 30) is found in southern California, southern Nevada, the extreme southwest corner of Utah and northwestern Arizona within the Basin and Range Province of the Intermontane Plateaus. The Mojave Desert is a transitional area between hot deserts and cold deserts where close proximity of these desert types exert enough influence on each other to distinguish these desert types from the hot and cold deserts beyond the Mojave. Kottek et. al 2006 defines hot deserts as areas where mean annual air temperatures are above 64 F (18 C) and cold deserts as areas where mean annual air temperatures are below 64 F (18 C). Steep elevation gradients within the Mojave create islands of low elevation hot desert areas surrounded by islands of high elevation cold desert areas. The Mojave Desert receives less than 10 inches of mean annual precipitation. Mojave Desert low elevation areas are often hyper-arid while high elevation cold deserts are often semi-arid with the majority of the Mojave being an arid climate. Hyper-arid areas receive less than 4 inches of mean annual precipitation and semi-arid areas receive more than 8 inches of precipitation (Salem 1989). The western Mojave receives very little precipitation during the summer months while the eastern Mojave experiences some summer monsoonal activity. In summary, the Mojave is a land of extremes. Elevation gradients contribute to extremely hot and dry summers and cold moist winters where temperature highs and lows can fluctuate greatly between day and night, from day to day and from winter to summer. Precipitation falls more consistently at higher elevations while lower elevations can experience long intervals without any precipitation. Lower elevations also experience a low frequency of precipitation events so that the majority of annual precipitation may come in only a couple precipitation events during the whole year. Hot desert areas influence cold desert areas by increasing the extreme highs and shortening the length of below freezing events. Cold desert areas influence hot desert areas by increasing the extreme lows and increasing the length of below freezing events. Average precipitation and temperature values contribute little understanding to the extremes which govern wildland plant communities across the Mojave. Hyper-Arid Mojave Land Resource Unit (XD)

LRU notes

The Mojave Desert is currently divided into 4 Land Resource Units (LRUs). This ecological site is within the Arid Eastern Mojave LRU where precipitation is bi-modal, occurring during the winter months and summer months. The Arid Eastern Mojave LRU is designated by the 'XB' symbol within the ecological site ID. This LRU is found across the eastern half of California, much of the mid-elevations of Nevada, the southernmost portions of western Utah, and the mid-elevations of northwestern Arizona. This LRU is essentially equivalent to the Eastern Mojave Basins and Eastern Mojave Low Ranges and Arid Footslopes of EPA Level IV Ecoregions Elevations range from 1650 to 4000 feet and precipitation is between 4 to 8 inches per year. This LRU is distinguished from the Arid Western Mojave (XA) by the summer precipitation, falling between July and September, which tends to support more warm season plant species. The 'XB' LRU is generally east of the Mojave River and the 117 W meridian (Hereford et. al 2004). Vegetation includes creosote bush, burrobrush, Nevada jointfir, ratany, Mojave yucca, Joshua tree, cacti, big galleta grass and several other warm season grasses. At the upper portions of the LRU, plant production and diversity are greater and blackbrush is a common dominant shrub.

Ecological site concept

This ecological site is found within the playa landscape on landforms such as a flood-plain playa or alluvial flat where moisture accumulation, through flooding, ponding or subsurface flow, contribute to the development or maintenance of a gypsic or salic horizon. This site is found on playas or portions of playas receiving water from larger watersheds, usually greater than 100,000 acres. Ephemeral streams terminating at this ecological site are typically stream order 3 or larger. This site is part of provisional concept R030XY129CA.

Similar sites

R030XY127CA	Sodic Dune 3-5" P.Z. Sodic Dunes 3-5
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Allenrolfea</i> (2) <i>Suaeda moquinii</i>
Herbaceous	Not specified

Physiographic features

Table 2. Representative physiographic features

Landforms	(1) Basin floor > Alluvial flat (2) Basin floor > Flood-plain playa
Elevation	180 – 200 m
Slope	0 – 20 %
Aspect	Aspect is not a significant factor

Climatic features

Table 3 Representative climatic features

Frost-free period (average)	360 days
Freeze-free period (average)	
Precipitation total (average)	100 mm

Influencing water features

This site is associated with a playa and may be intermittently flooded.

Soil features

Table 4. Representative soil features

Parent material	(1) Lacustrine deposits (2) Eolian deposits
Surface texture	(1) Very fine sandy loam
Drainage class	Well drained
Soil depth	150 cm
Surface fragment cover <=3"	0 – 20 %

Ecological dynamics

State and transition model

Additional community tables

Table 5. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 6. Community 2.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 2.3 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 8. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 9. Community 3.2 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 10. Community 3.3 plant community composition

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

This site has low species diversity. Small mammals that may occur include round-tailed ground squirrels and Merriam's kangaroo rats. Coyotes and black-tailed jackrabbits may also occur. Lizards common to this site include western whiptails and zebra-tailed lizards. Birds occurring on this site include horned larks, black-throated sparrows, loggerhead shrikes and common ravens. Season of Use- Other Mgt. Considerations: This site has limited value for livestock grazing due to very low productivity and lack of stock water. Iodinebush and Mojave seablite are considered poor forage for livestock. General guide to initial stocking rate. Before making specific recommendations, an on-site evaluation must be made. Pounds/acre air dry AUM/AC AC/AUM Normal Years 100

Hydrological functions

Runoff is medium. Hydrologic soil group B - soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well drained to well drained soils with moderately fine to moderately coarse textures. Hydrologic conditions: good - >70% ground cover (includes litter, grass and brush overstory); fair - 30 to 70% ground cover; poor 30% ground cover. Soil Series: Gypboy Hydrologic Group: B Hydrologic Conditions and Runoff Curves: Good 68; Fair 72; Poor 77

Recreational uses

This site is highly valued for open space and those interested in desert ecology.

Other information

Military Operations - Management for this site would be to protect it from excessive disturbance and maintain existing plant cover. Land clearing or other disturbances that destroy the vegetation can result in soil compaction reduced infiltration rates, accelerated erosion, soil blowing, barren areas and the introduction of non-native plants.

Inventory data references

Sampling technique _1_ NV-ECS-1 ____ SCS-Range 417 _1_ Other

Type locality

Location 1: San Bernardino County, CA	
Township/Range/Section	T5N R11E S6
UTM zone	N
UTM northing	3822869
UTM easting	603339
General legal description	SW1/4 Sec. 6, T5N R11E Approximately 5 miles southwest of Amboy, CA Amboy Crater Quadrangle UTM 11S 0603339e 3822869n (Datum=NAS-C) San Bernardino Co., CA

Other references

Cutler, P.L. and D.J. Griffin 1998. Personal communication, September 1998.

Hereford, R., R.H. Webb and C. I. Longpre. 2004. Precipitation history of the Mojave Desert region, 1893-2001 (No. 117-03).

Holland, R. F. (1986). Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, Department of Fish and Game.

Kottek, M., Grieser, J., Beck, C., Rudolf, B., & Rubel, F. 2006. World map of the Köppen-Geiger climate classification updated. Meteorologische Zeitschrift, 15(3), 259-263.

Laity, J. 2003. Aeolian destabilization along the Mojave River, Mojave Desert, California: linkages among fluvial, groundwater, and aeolian systems. Physical Geography, 24(3), 196-221.

Salem, B. B. 1989. Arid zone forestry: a guide for field technicians (No. 20). Food and Agriculture Organization (FAO).

Sawyer, J. O., & Keeler-Wolf, T. (1995). A manual of California vegetation.

Contributors

Approval

Sarah Quistberg, 2/25/2025

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	09/04/2026
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:
