

Ecological site R030XA024CA

Outwash Plain

Last updated: 10/21/2024

Accessed: 05/13/2025

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.

Ecological site concept

This site occurs on nearly level axial-stream floodplains and alluvial plains. Elevations are 2300 to 2400 feet. Slopes range from 0 to 1 percent.

The soils that characterize this site are very deep and moderately well drained. They are formed in fan and stream alluvium. Surface textures are fine sandy loams. The underlying material to 60 inches is stratified sandy loams to loamy sand over sandy clay loam. Soils are moderately alkaline.

Please refer to group concept R030XA009CA to view the general concept STM.

Associated sites

R030XA015CA	Coarse Loamy 5-7" P.Z. Coarse Loamy 5-7
-------------	---

Similar sites

R030XA014CA	Clay Plain Clay Plain [ATSP dominant species, ATCO co-dominant]
-------------	---

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Atriplex polycarpa</i> (2) <i>Atriplex spinifera</i>
Herbaceous	Not specified

Physiographic features

This site occurs on nearly level axial-stream floodplains and alluvial plains. Elevations are 2300 to 2400 feet. Slopes range from 0 to 1 percent.

Table 2. Representative physiographic features

Landforms	(1) Drainageway
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	Occasional
Elevation	701–732 m
Slope	0–1%

Aspect	Aspect is not a significant factor
--------	------------------------------------

Climatic features

The climate on this site is characterized by cool, relatively dry winters (30 to 60 degrees F) and hot, dry summers (70 to 100 degrees F). The average annual precipitation ranges from 3 to 7 inches with most falling as rain from November to March. Mean annual air temperature is 60 to 64 degrees F.

The average frost free period is 200 to 250 days.

Table 3. Representative climatic features

Frost-free period (average)	250 days
Freeze-free period (average)	
Precipitation total (average)	178 mm

Influencing water features

This site has no influencing water features

Soil features

The soils that characterize this site are very deep and moderately well drained. They are formed in fan and stream alluvium. Surface textures are fine sandy loams. The underlying material to 60 inches is stratified sandy loams to loamy sand over sandy clay loam. Soils are moderately alkaline. Available water capacity is moderate and the hazard of water erosion is slight. Wind erosion hazard is moderate. Effective rooting depth is 60 inches or more. Water tables are greater than 60 inches. These soils are subject to occasional flooding.

Soil Map Units

116 Helendale fine sandy loam, 0-1% slopes

Ecological dynamics

Please refer to group concept R030XA009CA to view the general concept STM.

As ecological condition deteriorates the perennial grasses are replaced by non-native annual grasses and forbs such as red brome, schismus, mustards and filaree. Burrobush and threadleaf snakeweed are also invaders on this site.

Water is the main limitation on this site. Water developments would greatly increase the diversity of species on this site.

The foliage of the saltbushes appears to have fire-retarding qualities associated with the salt content of the leaves. A severe fire, however, will typically kill aboveground portions of the saltbushes. Although, fire as a range management tool, is not recommended due to the wind erosion hazard and slow recovery rates.

State and transition model

Ecosystem states

1. Reference State -
Plant Community 1.1

State 1 submodel, plant communities

1.1. Reference State -
Plant Community 1.1

State 1

Reference State - Plant Community 1.1

Community 1.1

Reference State - Plant Community 1.1

The representative natural plant community is Mojave Wash Scrub or Allscale series. This community is dominated by allscale saltbush and spinescale saltbush. Potential vegetative composition is about 15% grasses, 10% forbs, and 75% shrubs. Annuals are abundant in wet years. The historic site potential is characterized by a low, shrubby, open community dominated by *Atriplex polycarpa* and *Atriplex spinescens*. Perennial grasses are sparse. Annuals grasses and forbs are abundant on favorable years. This site is unstable as it is subject to occasional flooding. The following table lists the major plant species and percentages by weight, air dry, of the total plant community that each contributes in an average production year. Fluctuations in species composition and relative production may change from year to year dependent upon abnormal precipitation or other climatic factors.

Forest overstory. ** Allow no more than 3% of each species of this group, and no more than 10% in aggregate

Forest understory. ** Allow no more than 2% of each species of the grasses group, and no more than 5% in aggregate

** Allow no more than 2% of each species of the forbs group, and no more than 5% in aggregate

Table 4. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	168	252	420
Grass/Grasslike	34	50	84
Forb	22	34	56
Total	224	336	560

Table 5. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	7-15%
Grass/grasslike foliar cover	2-3%
Forb foliar cover	1-2%
Non-vascular plants	0%

Biological crusts	0%
Litter	0%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

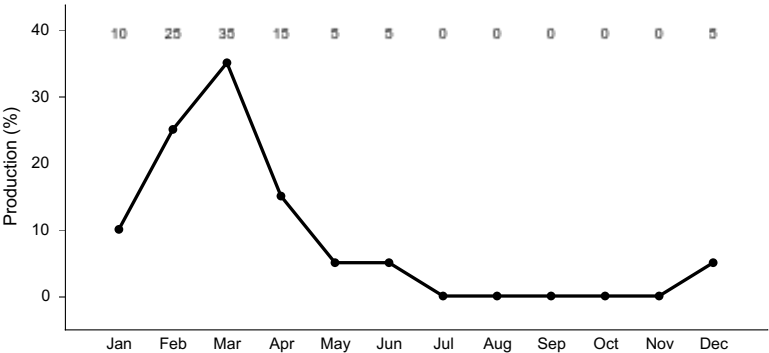


Figure 2. Plant community growth curve (percent production by month). CA3001, Spinescale. Growth starts in late winter. Flowering and seed set occur by June. Seeds remain on the shrubs for several months. Dormancy occurs during the hot summer months..

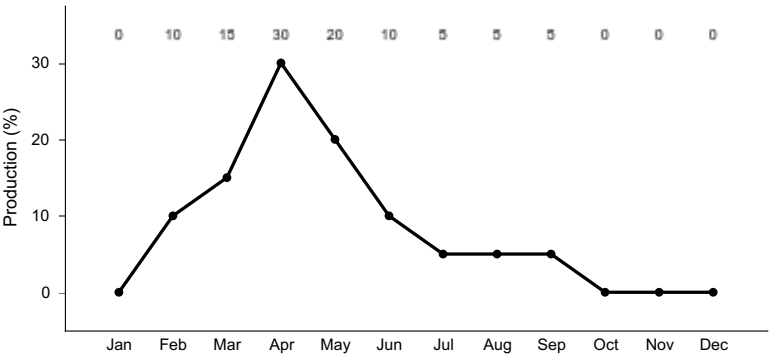


Figure 3. Plant community growth curve (percent production by month). CA3007, Allscale Saltbush. Growth begins in early spring; flowering and seed set occurs by October..

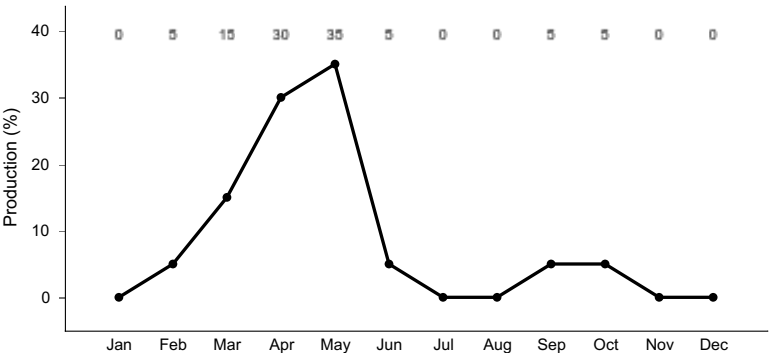


Figure 4. Plant community growth curve (percent production by month). CA3022, Indian ricegrass. Growth begins in late winter, flowering and fruiting finished by the hot summer months. Early fall rains can trigger a flush of new growth..

Additional community tables

Animal community

This site provides suitable habitat for small mammals such as kangaroo rats and ground squirrels, and fur and game mammals such as coyotes and rabbits. Songbirds and raptors are also common. This site is poorly suited for desert tortoise due to the hazard of flooding.

The soils on this site are poorly suited for livestock grazing. The main limitations are low forage production because of saline-alkaline conditions, hazard of wind erosion and lack of stock water. In years of favorable precipitation, an abundant quantity of annuals is produced which may support limited spring grazing.

General guide to initial stocking rate. Before making specific recommendations, an on-site evaluation must be made.

Pounds/acre air dry
AC/AUM
Normal Years 300

Hydrological functions

Runoff is negligible. 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. These soils have a moderate rate of water transmission. Hydrologic conditions: good - >70% ground cover (includes litter, grass, and brush overstory); fair - 30 to 70% ground cover; poor - <30% ground cover.

Soil Series: Helendale
Hydrologic Group: B
Hydrologic Conditions and Runoff Curves:
Good 68; Fair 72; Poor 77

Recreational uses

The site has value for open space and is used by joggers, mountain bikers and other off-road enthusiasts. Flowering wildflowers may also attract visitors during the spring. Off-road vehicle use can easily damage the soil structure and vegetative cover, causing increased soil blowing.

Other information

Military Operations - Motorized and non-motorized vehicles should be limited to existing roads and trails. Clearing or any other disturbance that destroys the soil structure and vegetation should be limited. Areas that are disturbed may be revegetated with native species adapted to saline-alkaline conditions. The soils are dusty when subjected to vehicular traffic and treatment may be desirable in areas of heavy traffic.

Inventory data references

Sampling technique

☒ NV-ECS-1
☐ SCS-Range 417
☐ Other

Type locality

Location 1: Kern County, CA	
Township/Range/Section	T10N R10W S17
General legal description	SW 1/4 Section 17, T10N, R10W Northwest of Wherry Housing Area, Edwards Kern Co, CA

Contributors

P. Novak-Echenique

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)	
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):**
-
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:**
-