Ecological site R030XA018CA
Dry Wash

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 inset fans on alluvial fans, fan piedmonts and rock pediments. Elevations are 2350 to 2850 feet. Slopes range from 0 to 9 percent.

The soils that characterize this site are very deep and somewhat excessively drained. They are formed in granitic alluvium. Surface textures are loamy coarse sands. Subsoils are loamy sand or sand.

Similar sites

R030XA024CA	**Outwash Plain** Outwash Plain [Spinescale saltbush (Atriplex spinifera) co-dominant species]

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Atriplex polycarpa* (2) *Larrea tridentata*
Herbaceous	Not specified

Physiographic features

This site occurs on inset fans on alluvial fans, fan piedmonts and rock pediments. Elevations are 2350 to 2850 feet. Slopes range from 0 to 9 percent.

Table 2. Representative physiographic features

Landforms	(1) Inset fan
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	Occasional
Elevation	716–869 m
Slope	0–10%
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 4 to 6 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)	285 days
Precipitation total (average)	254 mm

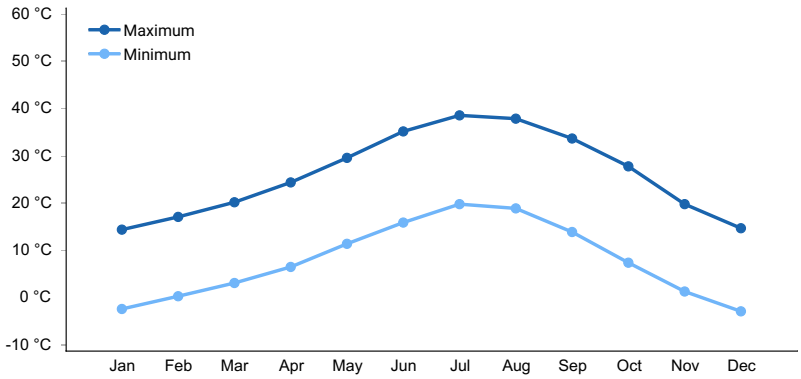

Figure 1. Monthly average minimum and maximum temperature

Influencing water features

Soil features

The soils that characterize this site are very deep and somewhat excessively drained. They are formed in granitic alluvium. Surface textures are loamy coarse sands. Subsoils are loamy sand or sand. Available water capacity is low and the hazard of water erosion is slight. Wind erosion hazard is severe. 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
105 Cajon loamy coarse sand, 0-5% slopes
Inclusions in MU 118, 122, 131, 133

Table 4. Representative soil features

Surface texture	(1) Loamy coarse sand
Family particle size	(1) Sandy
Drainage class	Somewhat excessively drained
Soil depth	152 cm
Available water capacity (0-101.6cm)	8.89–15.24 cm
Calcium carbonate equivalent (0-101.6cm)	1–5%
Electrical conductivity (0-101.6cm)	1–2 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	1–10
Soil reaction (1:1 water) (0-101.6cm)	7.4–8.4

Subsurface fragment volume <=3" (Depth not specified)	0–3%

Ecological dynamics

Please refer to group concept R030XA042CA to view the povisional STM.

The representative natural plant community is Mojave Wash Scrub or Allscale Saltbush series. This community is dominated by creosote bush (*Larrea tridentata*), allscale saltbush/cattle saltbush (*Atriplex polycarpa*), and burrobrush (*Hymenoclea salsola*). Potential vegetation composition by production (pounds of air-dry weight per acre in an average year) is 80% shrubs, 10% grasses, and 10% forbs. Fluctuations in species composition and relative production may change from year to year dependent upon abnormal precipitation or other climatic factors.

In a natural state, flooding would be the most common disturbance to this site. More frequent disturbance would decrease perennial grasses and creosotebush. When present, weedy species such as burrobrush and longspine horsebrush will increase if present in the community. Non-native annual forbs and grasses, such as redstem stork's bill (*Erodium cicutarium*), red brome (*Bromus rubens*), and schismus (*Schismus arabicus*), will also colonize disturbed sites.

Fire is infrequent and is not recommended as a management tool due to sparse cover, severe hazard of wind erosion and slow recovery rates.

Off-highway vehicle use is another disturbance, and will also result in an increase in weedy species and non-native annual forbs and grasses.

This site may be grazed, although it is not well-suited for this activity. Fire is an infrequent disturbance.

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 historic site potential is a low, shrubby, open community dominated by shrubs. Perennial grasses and forbs are sparse. Annual grasses and forbs are seasonally present. The major shrub species in this community are allscale saltbush, creosote bush, and burrobrush. Other minor shrub species listed in Plant Community Composition may contribute up to 5% (15 lbs/acre) of the total site production in an average year. As a group, they contribute up to 15% (45 lbs/acre) of the total production. The major grass species are Indian ricegrass (*Achnatherum hymenoides*) and desert needlegrass (*Achnatherum speciosum*). Other minor grass species listed in Plant Community

Composition may contribute up to 2% (6 lbs/acre) of the total site production in an average year. As a group, they contribute up to 5% (15 lbs/acre) of the total production. Perennial and annual forbs are a minor component of this community. Individual perennial forb species may contribute up to 2% (6 lbs/acre) of the total site production in an average year. As a group, they contribute up to 8% (24 lbs/acre) of the total site production in an average year. Annual forbs may contribute up to 5% (15 lbs/acre) of total site production in an average year. Approximate vegetation ground cover (basal and crown) is 5 to 15%. There are no major poisonous plant species in this ecosite. Ratings of ecological status are not applicable to this site due to the inherent instability of the plant community and the occurrence of 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 5% of each species of the shrub group, and no more than 15% in aggregate

Other shrubs comprise 5 to 15% composition (air-dry weight)

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

Other perennial grasses comprise 2 to 5% composition (air-dry weight)

Other annual grasses comprise 2 to 5% composition (air-dry weight)

** Allow no more than 2% of each species of the forbs group, and no more than 8% in aggregate

Other perennial grasses comprise 2 to 8% composition (air-dry weight)

Other annual grasses comprise 2 to 5% composition (air-dry weight)

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	90	269	359
Forb	11	34	45
Grass/Grasslike	11	34	45
Total	**112**	**337**	**449**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	4-12%
Grass/grasslike foliar cover	0-1%
Forb foliar cover	0-1%
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%

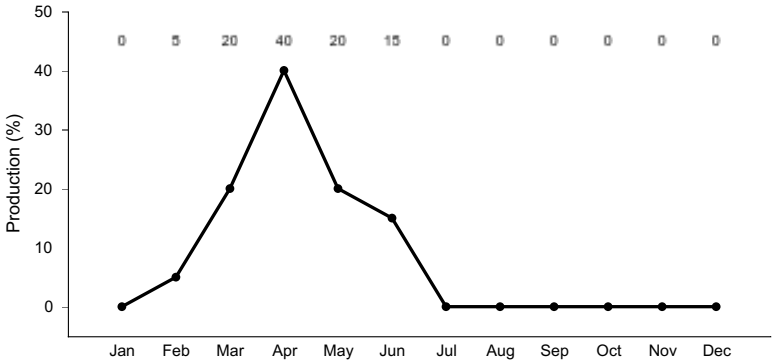

Figure 3. Plant community growth curve (percent production by month). CA3002, Creosote bush XY. Growth starts in early spring, flowering and seed set occur by July. Dormancy occurs during the hot summer months. With sufficient summer/fall precipitation, some vegetation may break dormancy and produce a flush of growth..

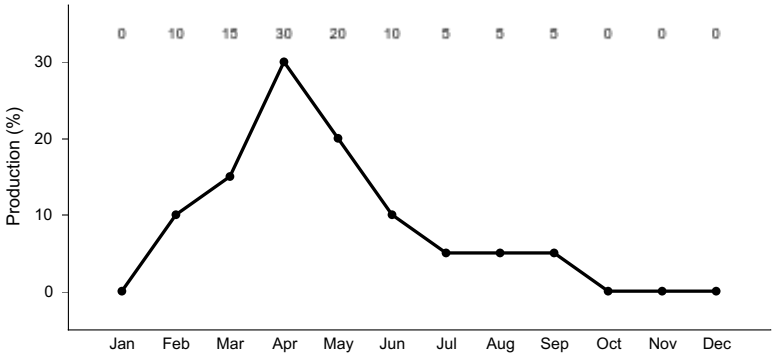

Figure 4. Plant community growth curve (percent production by month). CA3007, Allscale Saltbush. Growth begins in early spring; flowering and seed set occurs by October..

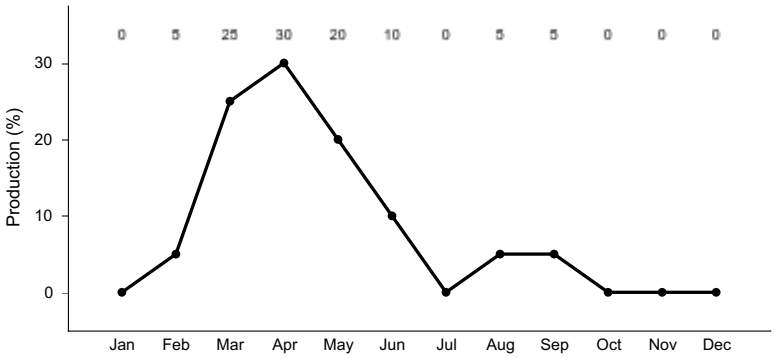

Figure 5. Plant community growth curve (percent production by month). CA3011, Burrobrush . Growth starts in early spring; flowering and seed set occur by June. Plants go dormant as a result of summer stress. New twig and leaf growth are initiated after summer and winter rains..

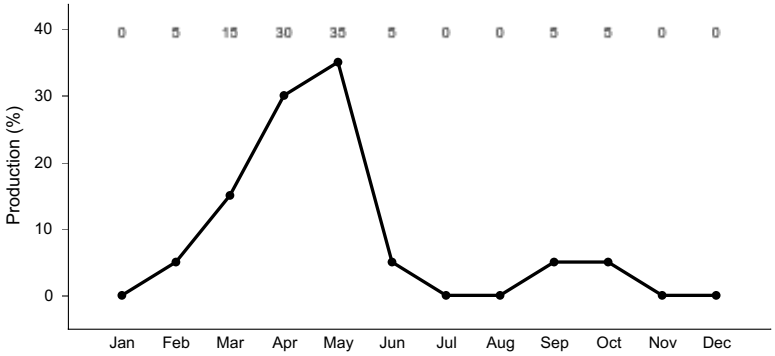

Figure 6. Plant community growth curve (percent production by month). CA3022, Indian ricegrass. Growth begins in late winter, flowering and fruiting finished by the hot summer months. Early fall rains can trigger a flush of new growth..

Figure 7. Plant community growth curve (percent production by month). CA3087, Desert needlegrass. Growth begins in mid-winter and continues through summer, setting seed in late summer..

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Shrub/Vine					
1	**Shrubs**			90–359	
	cattle saltbush	ATPO	*Atriplex polycarpa*	67–118	–
	creosote bush	LATR2	*Larrea tridentata*	17–50	–
	burrobrush	HYSA	*Hymenoclea salsola*	17–50	–
	winterfat	KRLA2	*Krascheninnikovia lanata*	0–17	–
	water jacket	LYAN	*Lycium andersonii*	0–17	–
	desertsenna	SEAR8	*Senna armata*	0–17	–
	longspine horsebrush	TEAX	*Tetradymia axillaris*	0–17	–
	Joshua tree	YUBR	*Yucca brevifolia*	0–17	–
	spinescale saltbush	ATSP	*Atriplex spinifera*	0–17	–
	Nevada jointfir	EPNE	*Ephedra nevadensis*	0–17	–
	Eastern Mojave buckwheat	ERFA2	*Eriogonum fasciculatum*	0–17	–
	burrobush	AMDU2	*Ambrosia dumosa*	0–17	–
Grass/Grasslike					
2	**Grasses**			11–45	
	Indian ricegrass	ACHY	*Achnatherum hymenoides*	7–34	–
	desert needlegrass	ACSP12	*Achnatherum speciosum*	7–17	–
	Grass, annual	2GA	*Grass, annual*	7–17	–
	squirreltail	ELELE	*Elymus elymoides ssp. elymoides*	0–7	–
	Sandberg bluegrass	POSE	*Poa secunda*	0–7	–
Forb					
3	**Forbs**			11–45	
	Forb, perennial	2FP	*Forb, perennial*	7–27	–
	Forb, annual	2FA	*Forb, annual*	7–17	–

Animal community

This site provides 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.

Management for this site would be to protect it from excessive disturbance and maintain exisiting plant cover. Habitat-destructive military maneuvers and vehicle activity off designated roads are incompatible with desert tortoise recovery. Non-essential roads and trails should be closed and revegetated with species indigenous to the site. Water developments would also increase the species diversity of this site.

Season of Use- Other Mgt. Considerations: This site is poorly suited for grazing. Low production and lack of water are the main limitations. In favorable years, annual forbs and grasses may provide limited spring grazing for sheep.

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

Pounds/acre
air dry

Normal Years 300

Hydrological functions

Runoff is negligible or very low.

Hydrologic soil group A (e.g. Cajon): soils have high infiltration rates even when thoroughly wetted, and consist of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.

Hydrologic condition:
Good - >70% ground cover (includes litter, grass, and brush overstory)
Fair - 30-70% ground cover
Poor - <30% ground cover

Soil group A hydrologic conditions and runoff curves:
Good-Fair-Poor = 49-55-63

Recreational uses

This site has value for open space and is used by 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 erosion.

Wood products

There are no wood products derived from this ecosite.

Other information

Military operations:
Motorized vehicles should be limited to existing roads and trails. Clearing or any other disturbance that destroys the soil structure and vegetation should be kept to a minimum. Disturbed areas should be revegetated with native species indigenous to this site.

Inventory data references

Sampling Technique:
_7_ NV-ECS-1
___ SCS-Range 417
___ Other

Type locality

Location 1: San Bernardino County, CA	
Township/Range/Section	T10N R7W S15
General legal description	NW 1/4

Other references

Developed in cooperation with: U.S. Department of Defense, Air Force Flight Test Center, Edwards Air Force Base; National Aeronautics and Space Administration-Dryden Flight Research Center, and Regents of the University of California.

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:**

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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):**

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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:**
