Ecological site R030XB126CA
Saline Slope 3-5" P.Z.

Last updated: 2/26/2025
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 sideslopes of erosional fan remnants. Elevations are 2200 to 3300 feet. Slopes range from 8 to 60 percent, but slope gradients of 8 to 30 percent are most typical. Surface textures are extremely cobbly sandy loams. Subsoil textures are sandy loams and gravelly sandy loams. The soils are saline-alkali.

Please refer to group concept R030XB116NV to view the provisional STM.

Associated sites

R030XB124CA	**Gravelly Loam 3-5" P.Z.** Gravelley Loam 3-5
R030XB136CA	**Dry Wash** Dry Wash

Similar sites

R030XB124CA	**Gravelly Loam 3-5" P.Z.** Gravelly Loam 3-5

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Atriplex hymenelytra* (2) *Ambrosia dumosa*
Herbaceous	Not specified

Physiographic features

This site occurs on sideslopes of erosional fan remnants. Elevations are 2200 to 3300 feet. Slopes range from 8 to 60 percent, but slope gradients of 8 to 30 percent are most typical.

Table 2. Representative physiographic features

Landforms	(1) Fan remnant
Elevation	2,200–3,300 ft
Slope	8–60%
Aspect	Aspect is not a significant factor

Climatic features

The climate on this site is arid characterized by warm, moist winters (30 to 60 degrees F) and hot, dry summers (70 to 100 degrees F). The average annual precipitation ranges from 3 to 5 inches with most falling as rain from November to March. Approximately 25% of the annual precipitation occurs from July to September as a result of summer convection storms. Mean annual air temperature is 64 to 70 degrees F.

The average frost-free period is 240 to 300 days.

Table 3. Representative climatic features

Frost-free period (average)	300 days
Freeze-free period (average)	
Precipitation total (average)	5 in

Influencing water features

Soil features

The soils that characterize this site are very deep and well drained. They are formed in mixed alluvium. Surface textures are extremely cobbly sandy loams. Subsoil textures are sandy loams and gravelly sandy loams. The soils are saline-alkali. Available water capacity is low and permeability is moderately rapid. Wind erosion hazard is negligible due to surface coarse fragments. Effective rooting depth is 60 inches or more.

Representative_Soil Map Units
155 Hollyhills-Spider association, 2-30% slopes
251 Cajon-Hollyhills-Spider association, 2-15% slopes

Ecological dynamics

Please refer to group concept R030XB116NV to view the provisional STM.

As ecological condition deteriorates, the perennial grasses decrease. The opportunistic shrubs such as desert holly, white bursage and shadscale increase. Desert trumpet and wirelettuce will also increase. Invaders on this site include red-stem filaree and schismus. White burrobush is the primary perennial pioneer species.

Desert communities are usually unaffected by fire because of low fuel loads, although a year of exceptionally heavy winter rains can generate fuels by producing a heavy stand of annual forbs and grasses. When fires do occur, the effect on the ecosystem may be extreme due to the harsh environment and the slow rate of recovery. Saltbush species, such as desert holly, are generally resistant to fire because of a low volatilization rate. White bursage and creosotebush possess limited sprouting ability, thus, can be killed by fire. White bursage, however, can rapidly re-establish from seed.

Revegetation of Disturbed Areas - Species indigenous to this site are recommended for any revegetation efforts. Desert holly and white bursage are effective for erosion control and slope stabilization. Transplanting seedlings is more effective than direct seeding. Planting in late fall or early spring allows for acclimation to summer conditions. Transplants that are dormant during the hot, dry season are best maintained that way rather than attempting to force them to break dormancy and undergo new vegetative growth out of season. Supplemental irrigation is recommended for the first growing season, especially if winter rainfall has been sparse. Protection from rodents is also recommended.

Non-native plants occurring on this site include *Schismus arabicus*, Arabian schismus, and *Erodium cicutarium*, red-stem filaree.

Management for this site would be to protect it from excessive disturbance and maintain existing plant cover and the cryptogamic crust. Close roads and trails no longer being used and revegetate using native species indigenous to

this site. Vehicle activity off of designated roads and tank trails may result in destruction of desert tortoise and small mammal burrows. Water developments would increase the species diversity of this site.

State and transition model

Ecosystem states

1. Reference Plant Community - 1.1

State 1 submodel, plant communities

1.1. Reference Plant Community - 1.1

State 1
Reference Plant Community - 1.1

Community 1.1
Reference Plant Community - 1.1

The historic site potential is comprised of low, grayish microphyllous shrubs, 0.3 to 1 meter tall, with some succulent species. Total cover often low, with bare ground between the widely spaced shrubs. Stands typically are strongly dominated by a single Atriplex species. Perennial grasses and forbs are sparse. Annual grasses and forbs are seasonally present. Pockets of cryptogamic crust have developed in between the surface rock and vegetation. This site is stable in this condition. The representative natural plant community is Desert Saltbush Scrub or Desert-holly Series. This community is dominated by desert holly and white bursage. Potential vegetative composition is about 5% grasses, 10% forbs, and 85% shrubs. 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 the shrub group and no more than 10% in aggregate.

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

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

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

**Allow no more than 2% of each forb species and no more than 8% in aggregate.

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

Other annual grasses comprise trace to 10% composition (air-dry weight)

Table 4. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	43	128	213
Forb	5	15	25
Grass/Grasslike	3	8	13
Total	**51**	**151**	**251**

Table 5. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	3-8%
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%

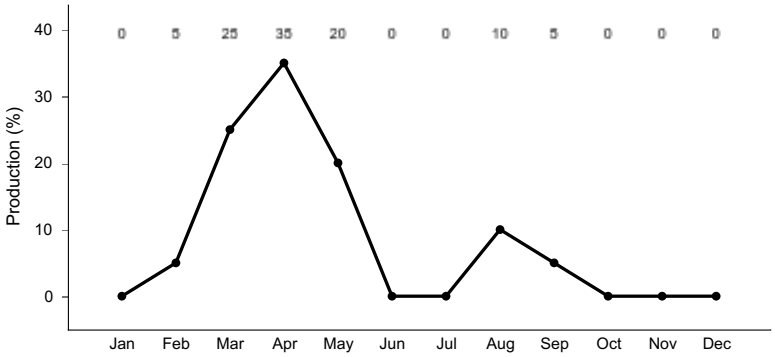

Figure 2. Plant community growth curve (percent production by month). CA3004, Burrobush XB. Growth starts in early spring, flowering and seed set occur by July. Dormancy occurs during the hot summer months. With sufficient summer/fall precipitation, some vegetation may break dormancy and produce a flush of new growth..

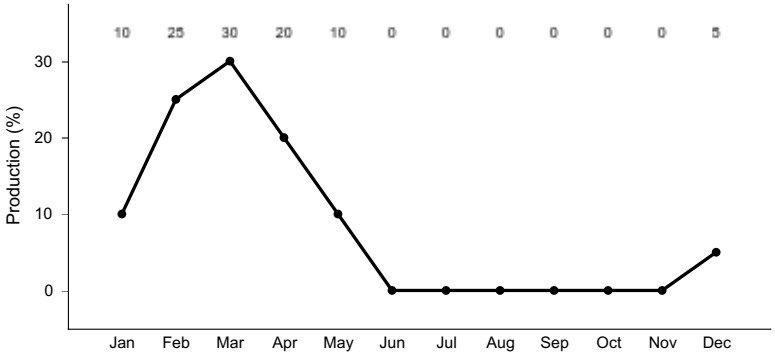

Figure 3. Plant community growth curve (percent production by month). CA3005, Desert Holly. Growth starts in early winter; flowering occurs from January to April. Seed set occurs by May..

Additional community tables

Animal community

This site provides suitable habitat for mammals such as antelope ground squirrels; pocket mice; Merriam's and Great Basin kangaroo rats; and black-tailed jackrabbits and coyotes.

This site provides habitat for lizards such as the western whiptail, side-blotched lizard and desert horned lizard. The soils provide suitable habitat for burrowing reptiles such as desert tortoise.

(Brown and Nagy 1995; Brydolf 1996; Recht 1995)

Birds common to this site include common ravens, black-throated and sage sparrows, and rock wrens.

Hydrological functions

Runoff is medium to high. Hydrologic 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: Hollyhills
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. Flowering wildflowers and shrubs may also attract visitors during the spring.

Other information

LIVESTOCK GRAZING:

Season of Use - Other Mgt. Considerations: This site has limited use for livestock grazing due to low productivity, steep slopes and lack of stock water. White bursage is fair browse for cattle and horses, and fair to good browse for goats. Sheep also use this shrub, feeding primarily on new growth and seeds. Creosotebush is unpalatable to livestock. During favorable years, annuals grasses and forbs provide additional forage.

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

Pounds/acre
Air dry

Normal years 150

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, cryptogamic crust and soil structure can result in soil compaction, reduced infiltration rates, accelerated erosion, soil blowing and barren areas. The frequency of flash flooding may also increase with increased surface runoff and loss of vegetative cover. Rest or protect sites from further disturbance. Gully stabilization methods include straw bale checkdams, rock riprap, and sand bags.

Inventory data references

Sampling technique

___ NV-ECS-1
___ SCS-Range 417
_4_ Other

Type locality

Location 1: San Bernardino County, CA	
Township/Range/Section	T12N R4E S15
UTM zone	N
UTM northing	3887925
UTM easting	541504
General legal description	TYPICAL SITE LOCATION: NW1/4 Sec. 15 T12N R4E Approximately 5.5 miles southeast of Langford Well Lake East of Langford Well Quadrangle UTM 11S 0541504e 3887925n (Datum=NAS-C) San Bernardino Co., CA

Other references

Brown, T.K. and K. A. Nagy with R.D. Nieuhaus, Inc. 1995. Final Report, Herpetological Surveys and Physiological Studies on the Western Portion of Fort Irwin NTC.

Brydolf, B. with R.D. Nieuhaus, Inc. 1996. Final Report, 1994 Avian Survey at the National Training Center, Fort Irwin, CA.

Recht, M.A. with R.D. Nieuhaus, Inc. 1995. Final Report, 1994 Small Mammal Surveys of Selected Sites at the National Training Center Fort Irwin, California.

Contributors

P. Novak-Echenique

Approval

Sarah Quistberg, 2/26/2025

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	Sarah Quistberg
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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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:**
