Ecological site R030XB194CA
Rarely Flooded Alluvial Fan/Fan Apron

Last updated: 2/25/2025
Accessed: 05/11/2025

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 ecological site is found on alluvial fans and fan aprons. It occurs at elevations of 3200 to 4200 feet. Slopes range from 2 to 8 percent. Very rare to occasional flooding and no ponding occur on this site. Runoff is very low to low.

Please refer to group concept R030XB192CA to view the provisional STM.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Senna armata* (2) *Larrea tridentata*
Herbaceous	(1) *Pleuraphis rigida*

Physiographic features

This ecological site is found on alluvial fans and fan aprons. It occurs at elevations of 3200 to 4200 feet. Slopes range from 2 to 8 percent. Very rare to occasional flooding and no ponding occur on this site. Runoff is very low to low.

Table 2. Representative physiographic features

Landforms	(1) Alluvial fan (2) Fan apron
Flooding duration	Extremely brief (0.1 to 4 hours) to very brief (4 to 48 hours)
Flooding frequency	Very rare to occasional
Elevation	3,200–4,200 ft
Slope	4–15%
Water table depth	60 in
Aspect	Aspect is not a significant factor

Climatic features

Influencing water features

Soil features

This ecological site is found on the following map units and soil series:
4245 Yander, 20
PF900, Hypoint, 2

Data below may be wrong, based on Morongo soils, which this ESD is not linked to.

Table 3. Representative soil features

Surface texture	(1) Sand
Family particle size	(1) Sandy
Drainage class	Somewhat excessively drained
Permeability class	Rapid
Soil depth	40–60 in
Surface fragment cover <=3"	65–100%
Surface fragment cover >3"	0–5%
Available water capacity (0-40in)	1.5–3.25 in
Calcium carbonate equivalent (0-40in)	0–1%
Electrical conductivity (0-40in)	0–2 mmhos/cm
Sodium adsorption ratio (0-40in)	0–4
Soil reaction (1:1 water) (0-40in)	6–6.8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0–5%

Ecological dynamics

Please refer to group concept R030XB192CA to view the provisional STM.

State and transition model

Ecosystem states

1. Current Managed State

State 1 submodel, plant communities

1.2. Current Managed State

State 1
Current Managed State

Community 1.1
Current Managed State

Vegetation Canopy Cover: Shrubs: blackbrush (*Coleogyne ramosissima*) 0-1% Wiggins' cholla (*Cylindropuntia echinocarpa*) 0-1% Nevada jointfir (*Ephedra nevadensis*) 1-5% Eastern Mojave buckwheat (*Eriogonum fasciculatum*) 0-1% narrowleaf goldenbush (*Ericameria linearifolia*) 0-1% burrobrush (*Hymenoclea salsola*) 1-2% white ratany (*Krameria grayi*) 0-1% creosote bush (*Larrea tridentata*) 5-15% Mexican bladdersage (*Salazaria mexicana*) 1-2% desertsenna (*Senna armata*) 5-15% jojoba (*Simmondsia chinensis*) 0-1% turpentinebroom (*Thamnosma montana*) 0-1% Mojave woodyaster (*Xylorhiza tortifolia*) 0-1% Joshua tree (*Yucca brevifolia*) 0-1% Mojave yucca (*Yucca schidigera*) 0-1% Grasses: red brome (*Bromus rubens*) 3-5% big galleta (*Pleuraphis rigida*) 5-10% Forbs: bristly fiddleneck (*Amsinckia tessellata*) 3-5% pincushion flower (*Chaenactis fremontii*) 1-3% redstem stork's bill (*Erodium cicutarium*) 1-3% Great Basin langloisia (*Langloisia setosissima*) 1-2% desert dandelion (*Malacothrix glabrata*) 1-2% small wirelettus (*Stephanomeria exigua*) 1-2%

Table 4. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	105	160	210
Forb	50	110	170
Grass/Grasslike	30	50	75
Total	**185**	**320**	**455**

Table 5. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	15-25%
Grass/grasslike foliar cover	5-10%
Forb foliar cover	5-15%
Non-vascular plants	0%
Biological crusts	0%
Litter	5-15%
Surface fragments >0.25" and <=3"	25-35%
Surface fragments >3"	1-2%
Bedrock	0%
Water	0%
Bare ground	20-25%

Table 6. Canopy structure (% cover)

Height Above Ground (Ft)	Tree	Shrub/Vine	Grass/ Grasslike	Forb
<0.5	–	0-1%	3-5%	5-15%
>0.5 <= 1	–	1-5%	5-10%	5-10%
>1 <= 2	–	20-30%	–	–
>2 <= 4.5	–	0-1%	–	–
>4.5 <= 13	–	–	–	–
>13 <= 40	–	–	–	–
>40 <= 80	–	–	–	–
>80 <= 120	–	–	–	–
>120	–	–	–	–

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Shrub/Vine					
1	**Shrubs**			105–210	
	desertsenna	SEAR8	*Senna armata*	75–125	–
	creosote bush	LATR2	*Larrea tridentata*	15–40	–
	narrowleaf goldenbush	ERLI6	*Ericameria linearifolia*	3–7	–
	burrobrush	HYSA	*Hymenoclea salsola*	3–7	–
	Nevada jointfir	EPNE	*Ephedra nevadensis*	3–7	–
	Mojave yucca	YUSC2	*Yucca schidigera*	3–7	–
	Mexican bladdersage	SAME	*Salazaria mexicana*	1–5	–
	white ratany	KRGR	*Krameria grayi*	1–3	–
	turpentinebroom	THMO	*Thamnosma montana*	1–3	–
	Mojave woodyaster	XYTO2	*Xylorhiza tortifolia*	0–2	–
	Joshua tree	YUBR	*Yucca brevifolia*	0–2	–
	jojoba	SICH	*Simmondsia chinensis*	0–2	–
	Eastern Mojave buckwheat	ERFA2	*Eriogonum fasciculatum*	0–2	–
	blackbrush	CORA	*Coleogyne ramosissima*	0–1	–
	Wiggins' cholla	CYEC3	*Cylindropuntia echinocarpa*	0–1	–
Grass/Grasslike					
2	**Grasses**			30–75	
	red brome	BRRU2	*Bromus rubens*	15–35	–
	big galleta	PLRI3	*Pleuraphis rigida*	15–35	–
Forb					
3	**Forbs**			50–170	
	redstem stork's bill	ERCI6	*Erodium cicutarium*	20–60	–
	pincushion flower	CHFR	*Chaenactis fremontii*	15–35	–
	Forb, annual	2FA	*Forb, annual*	1–20	–
	bristly fiddleneck	AMTE3	*Amsinckia tessellata*	0–20	–
	smooth desertdandelion	MAGL3	*Malacothrix glabrata*	10–20	–
	Great Basin langloisia	LASE3	*Langloisia setosissima*	3–7	–
	small wirelettuce	STEX	*Stephanomeria exigua*	1–5	–

Contributors

Allison Tokunaga

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	05/11/2025
Approved by	Sarah Quistberg
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:**
