

Ecological site R040XB222AZ Volcanic Hills 7"-10" p.z.

Accessed: 05/11/2025

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)	Dave Womack, Dan Robinett, Emilio Carrillo
Contact for lead author	NRCS Tucson Area Office
Date	12/28/2005
Approved by	S. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Common on the site only in areas where rock and gravel cover is low. Rills follow joints, fractures and bedding planes in the bedrock parent materials.

-
2. **Presence of water flow patterns:** Water flow patterns are common, continuous and cover 15-20% of area.

-
3. **Number and height of erosional pedestals or terracettes:** No pedestals or terracettes on the site.

-
4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 1-5%

-
5. **Number of gullies and erosion associated with gullies:** none

-
6. **Extent of wind scoured, blowouts and/or depositional areas:** No evidence of soil movement by wind.

-
7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter can move by wind and water. Woody litter remains under shrub canopies.

-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface resistance to erosion is good under shrub canopies & areas with high rock and gravel cover to moderate in soil interspaces due to crusts formed by raindrop impact.
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak thin platy to granular, to 3 inches thick.
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Canopy 10-20%; 90-95% trees, 2-5% shrubs, 1-2% half shrubs, 1-2% succulents. Cover is well dispersed throughout the site.
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None.
-
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: trees > large shrubs = half shrubs > winter annuals > summer annuals > perennial grasses and forbs > cryptogams (Note: In El Nino years, annual forbs and grasses are #1 in above ground weight.)
- Sub-dominant:
- Other:
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 0-50% canopy mortality
-
14. **Average percent litter cover (%) and depth (in):** Herbaceous litter is not persistent on the site and may be 20-60% in El Nino years.
-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 300 lbs/ac unfavorable precipitation; 500 lbs/ac normal precipitation; 750 lbs/ac favorable precipitation.
-
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: Sahara mustard (potential)

17. **Perennial plant reproductive capability:** Not impaired for shrubs, drought impaired for perennial grasses and forbs.
-