

Ecological site R030XB140CA Shallow Hill 4-6" P.Z.

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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.

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Date	07/14/2009
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Rills are none. Rock fragments armor the soil surface against erosion.

- Presence of water flow patterns:** Water flow patterns are none to rare. A few may on steeper slopes (short <1m) after summer convection storms.

- Number and height of erosional pedestals or terracettes:** Pedestals and terracettes are none.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is variable (15-25%), depending on amount of surface rock fragments.

- Number of gullies and erosion associated with gullies:** None. Natural drainages may be observed on steeper side slopes.

- Extent of wind scoured, blowouts and/or depositional areas:** None

- Amount of litter movement (describe size and distance expected to travel):** Litter typically remains in place. Fine

litter (foliage from grasses and annual and perennial forbs) may move the distance of slope length (<10 ft) during intense summer convection storms or rapid snowmelt events. Persistent litter (large woody material) will remain in place except during large rainfall events.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil stability values should be 3 to 6 depending on soil textures and canopy cover. (To be field tested.)

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is typically weak thin to medium platy. Soil surface colors are light and the soils have an ochric epipedon. Organic matter of the surface 2 to 3 inches is less than 1 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Sparse shrub canopy (10-15%) and associated litter provide some protection from raindrop impact.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None. Subangular blocky structure, calcic or petrocalcic horizons are not to be interpreted as compacted layers.

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: white bursage > creosotebush > associated desert shrubs >

Sub-dominant: warm-season perennial grasses > perennial forbs > annual forbs > cool-season perennial grasses

Other: succulents, microbiotic crusts

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Dead branches within individual shrubs are common and standing dead shrub canopy material may be as much as 25% of total woody canopy.

14. **Average percent litter cover (%) and depth (in):** Between plant interspaces 5-15% and depth of litter is $\pm\frac{1}{4}$ inch. Litter is concentrated under shrubs and generally stays in place.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** For normal or average growing season ~250 lbs/ac. Favorable years \pm 350 lbs/ac and unfavorable years \pm 100 lbs/ac.

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: Red brome, red-stem filaree, mustards, and Mediterranean grass are potential invaders on this site.
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17. **Perennial plant reproductive capability:** All functional groups should reproduce in average and above-average rainfall years. Little growth and reproduction occurs during extreme drought and extended drought periods.
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