

Ecological site R081BY350TX

Steep Rocky 23-31 PZ

Last updated: 9/19/2023

Accessed: 05/03/2024

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.

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Date	08/11/2004
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None.
2. **Presence of water flow patterns:** Water flow patterns are common but are short (5 to 10 feet) due to interruption by rocks or plant bases.
3. **Number and height of erosional pedestals or terracettes:** Pedestals or terracettes are uncommon for this site.
4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** This site has essentially no bare ground and any patches are randomly distributed throughout the site in small and non-connected areas.
5. **Number of gullies and erosion associated with gullies:** Some gullies may be present on side drains into perennial and intermittent streams. Gullies should be vegetated and stable.
6. **Extent of wind scoured, blowouts and/or depositional areas:** Essentially none.

7. **Amount of litter movement (describe size and distance expected to travel):** Some litter movement expected. Under moderate events, litter will move across large fragments until interrupted by plants and large rocks. Litter of all sizes may move long distances during intense storm events due to the steepness of the site.
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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):** Soil surface under reference conditions are resistant to erosion. Soil stability class range is expected to be 5 to 6.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very dark grayish brown (10 YR 3/2) cobbly clay, weak fine subangular blocky and moderate very fine granular structure, slightly hard, firm, sticky and plastic, 50 percent worm casts, 40 to 80 percent of horizon and subsurface are limestone fragments, calcareous, moderately alkaline. One to four percent SOM.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** High canopy, basal cover and density with small interspaces should make rainfall impact negligible. The stones in the profile capture moisture and enter through soil profile. This site has well drained, very shallow to shallow soils with 20 to 60 percent slopes, which are susceptible to high runoff and erosion rates.
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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):** None.
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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: Warm-season midgrasses
- Sub-dominant: Warm-season tallgrasses Trees Forbs
- Other: Cool-season midgrasses Shrubs/Vines
- Additional: Forbs make up 10 percent of species composition, shrubs and trees compose up to 20 percent species composition.
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Grasses will almost always show some mortality and decadence.
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14. **Average percent litter cover (%) and depth (in):** Litter is primarily herbaceous.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,000 to 3,500 pounds per acre.

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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: Ashe juniper and mesquite are the primary invaders.
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17. **Perennial plant reproductive capability:** All plants are capable of reproduction except during periods of prolonged drought conditions, heavy natural herbivory, or intense wildfires.
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