USDA Natural Resources
Conservation Service

Ecological site R081CY356TX
Blackland 29-35 PZ

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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.

Author(s)/participant(s)	
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Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to slight.

2. **Presence of water flow patterns:** Uncommon. Minimal presence of past or current erosion. Those present are short and stabilized.

3. **Number and height of erosional pedestals or terracettes:** Uncommon. Minimal presence of erosional pedestals or terracettes. Those present are stabilized.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 0-5 percent bare ground. Small and non-connected areas.

5. **Number of gullies and erosion associated with gullies:** Uncommon. Minimal presence of gullies. Those present after disturbance such as fire or prolonged drough healed over within a few years.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Moderate movement of fine litter for short distances.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Erosion stability values estimated at 5-6. Water erosion hazard of bare soil is severe.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Characteristic soil is Medlin series and surface layer is grayish brown clay about 9 inches thick. Structure is moderate fine subangular blocky. Fine roots common. SOM is high.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Climax tallgrasses with good distribution and cover provided excellent infiltration and control of runoff. Water runoff is rapid but generally free of erosive action.

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: Warm-season tallgrasses >>

    Sub-dominant: Warm-season midgrasses > Forbs >

    Other: Cool-season grasses > Warm-season shortgrasses > Trees > Shrubs

    Additional: Forbs make up 10% species composition while trees and shrubs compose of 5% species composition.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal. Grasses will almost always show some mortality and decadence, especially during drought conditions.

14. **Average percent litter cover (%) and depth (in):** Interspaces between plant canopies essentially covered with various sizes of litter and mulch.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 3500# in years with below average moisture, 5500# in average moisture years and 6500# in above average moisture years.

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, mesquite, western soapberry, prickly pear and baccharis.

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17. **Perennial plant reproductive capability:** Good. All species should be capable of reproducing except during periods of prolonged drought, heavy natural herbivory or intense fire. Recovery from these disturbances should take 2-5 years.
