USDA Natural Resources
Conservation Service

Ecological site R078CY005OK
Loamy Breaks

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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	07/01/2004
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** There could some rills where water flows and concentrates down the steep slopes. Usually these are no more than 4” deep and 10” wide.

2. **Presence of water flow patterns:** Flow patterns will exist where water flows down the slopes. Usually these will be distinct.

3. **Number and height of erosional pedestals or terracettes:** Pedestalled plants or rocks can occur but are usually < 1 inch tall depending upon slope. Terracettes can be common.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Should not exceed 50 %.

5. **Number of gullies and erosion associated with gullies:** No serious head cutting, drainages generally have stable channels: vegetation common in the bottom of the channels, there can be some geologic erosion. In most cases the south exposure will be more prone to geologic erosion than the north slope.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Litter will move, especially after heavy rainfall events. It would not be uncommon for litter to move 2 – 3 feet.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Surface soil is stabilized by organic matter decomposition products and/or a biological crust under vegetation, Stability score 5 – 6. On geologic erosion parts of the site, the Stability Score will be below 4.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A: 0 to 8 inches; reddish brown loam, weak medium granular structure. Bw: 8 to 13 inches; red loam, weak medium granular structure.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant community dominated by deep, fibrous rooted perennial grasses with some shrubs. Any changes in infiltration and runoff can be attributed to other factors such as compaction or trailing.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** No compaction layer.

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: Little Bluestem

    Sub-dominant: Other Midgrasses, Shortgrasses, Forbs

    Other: Shrubs

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Some decadence with perennial grasses in the absence of fire and herbivory but usually < 10%.

14. **Average percent litter cover (%) and depth (in):** Litter will be scattered because of slope, and not well distributed. Litter cover is < 50% at depths not exceeding ½ inch.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1200 – 1800 pounds per acre.

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:** None.

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17. **Perennial plant reproductive capability:** Capability to produce seed or vegetative tillers is not reduced relative to recent climatic conditions. All plants should reproduce every 2 – 3 years.
