

## Ecological site R082BY004OK Boulder Ridge Savannah

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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)	Harry Fritzler, Steve Glasgow, Jack Eckroat, Mark Moseley
Contact for lead author	Suite 206 100 USDA Stillwater, Oklahoma 74074
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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:** There are few, if any, rills and there is no active headcutting and sides are covered with vegetation.
- 2. Presence of water flow patterns:** There is little, if any, evidence of soil deposition or erosion (some possibly apparent around rocks and grass roots after significant rain events).
- 3. Number and height of erosional pedestals or terracettes:** Pedestaled plants or rocks are rare, usually not more than ½ inch deep. Terracettes uncommon, but may be found on the steeper portion of the site, but usually do not exceed 12 inches apart.
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Variable, but should average ~15% bare ground on this site. Bare areas are small and not connected.
- 5. Number of gullies and erosion associated with gullies:** None due to shallow soils, drainages are represented as natural stable channels; vegetation is common with no signs of erosion.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None.
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7. **Amount of litter movement (describe size and distance expected to travel):** Uniform distribution of litter. Litter rarely moves >12 inches on flatter slopes and may be as much as doubled on steeper slopes, then only during high intensity storms.
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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):** Surface soil is stabilized (Stability Score 5-6). Stability scores based on a minimum of 6 samples tested.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface intact A horizon: 0 to 11 inches, brown cobbly loam, fine granular structure B horizon: 11 to 40 inches, reddish brown very cobbly clay to red extremely cobbly clay loam. Soil structure is medium blocky to sub angular blocky.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Infiltration and runoff are affected more by the slope and the amount of rocks on the surface (15-40%) than any changes in plant community composition and distribution. (Tallgrass/Midgrass dominated). Any changes in infiltration and runoff can be attributed to other factors (e.g. compaction).
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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):** There is usually no compaction layer.
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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: Tallgrasses, Midgrasses
- Sub-dominant: Shortgrasses, Forbs
- Other: Shrubs, Annuals, Trees
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** There is some plant mortality and decadence on the perennial grasses, especially in the absence of fire and herbivory or following severe drought, but usually <5%.
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14. **Average percent litter cover (%) and depth ( in):** Litter should cover >80% of the area between plants with accumulations of ~1/2 inch deep.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Normal production is 500 – 2000 pounds per year.

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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: No invasive species. Invasives might include: mesquite, prickly pear, eastern redcedar, annuals and non-natives.
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17. **Perennial plant reproductive capability:** All plants capable of reproducing at least every 2 years. Seed stalks, stalk length, and seedheads are numerous and what would be expected. Overall health of plants is what would be expected.
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