

Ecological site R063BY017SD Shallow Clay

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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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Approved by	Stan Boltz
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Slight to none, typically on steeper slopes and discontinuous.

- Presence of water flow patterns:** None, or barely visible and discontinuous with numerous debris dams when present.

- Number and height of erosional pedestals or terracettes:** Few pedestalled plants typically on steeper slopes.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground roughly 5 to 15 percent, and patches less than 2 inches in diameter.

- Number of gullies and erosion associated with gullies:** None should be present.

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

- Amount of litter movement (describe size and distance expected to travel):** Small size litter classes will generally move short distances, some medium size class litter will move very short distances. Litter debris dams are occasionally present.

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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 aggregate stability ratings typically 4 to 6. Surface organic matter adheres to the soil surface.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A-horizon should be 2 to 4 inches thick with light to dark brownish gray colors. Structure should typically be fine granular at least in the upper A-horizon.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Combination of shallow and deep rooted species (mid & tall rhizomatous and tufted perennial cool- and warm-season grasses) with fine and coarse roots positively influences infiltration.
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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 – when dry, B horizons can be hard and appear to be compacted, but no platy structure will be present.
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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: Tall and mid, cool-season bunchgrasses = tall, warm-season grasses = wheatgrasses (mid, cool-season) >
- Sub-dominant: Mid, warm-season grasses >
- Other: Forbs > shrubs > short, warm-season grasses = grass-likes species > short, cool-season bunchgrasses > trees
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very little evidence of decadence or mortality. Bunch grasses have strong, healthy centers and shrubs are vigorous.
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14. **Average percent litter cover (%) and depth (in):** Litter cover 40 to 60 percent, and litter in contact with soil surface. Litter depth about 0.25 to 0.5 inches.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Total annual production ranges from 1,400 to 3,000 pounds/acre, with the reference value being 2,200 pounds/acre (air-dry basis).
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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: State and local noxious weeds; also Kentucky bluegrass.

17. **Perennial plant reproductive capability:** Perennial grasses should have vigorous rhizomes or tillers.
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