USDA Natural Resources
Conservation Service

Ecological site R055CY018SD
Dense 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	Suzanne Mayne-Kinney
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills should not be present.

2. **Presence of water flow patterns:** None.

3. **Number and height of erosional pedestals or terracettes:** None.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground typically 5 to 25 percent depending on recent precipitation. During below average precipitation periods, bare ground will increase.

5. **Number of gullies and erosion associated with gullies:** Active gullies should not be present.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Little to no plant litter movement. Plant

litter remains in place and is not moved by erosional forces.

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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 normally a 4 to 6 rating. Typically high root content and organic matter in the soil surface. Soil surface is very resistant to erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is typically granular, and mollic (higher organic matter) colors of A-horizon down to about 2 inches. If conditions are other than this, refer to map unit component descriptions for component on which the site occurs.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Healthy, deep-rooted native grass and grass-like species enhance infiltration and reduce runoff.

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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):** No compaction layer should be present. At about 2 to 4 inches, clay content is very high and may appear to be a compaction layer, but platy structure will not be observed and this should not be confused with a 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: Mid cool-season rhizomatous grass >>

    Sub-dominant: Tall cool-season bunchgrass >

    Other: Mid warm-season grasses = short warm-season grasses = forbs > short grass-likes = shrubs.

    Additional: Due to differing root structure and distribution, Kentucky bluegrass and smooth bromegrass do not fit into reference plant community F/S groups.

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very little to no evidence of decadence or mortality.

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14. **Average percent litter cover (%) and depth (in):** 55-85 percent plant litter cover, roughly 0.25 to 0.5 inches in depth. Litter cover is in contact with the soil surface.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,200–2,400 lbs./acre air-dry weight, average 1,800 lbs./acre air-dry weight.

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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: Refer to State and local Noxious Weed List.

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