

Ecological site R053BY003ND Closed Depression

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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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Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

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):** Normally bare ground is less than 5% with bare patches 2 inches in diameter. Following well above, or well below average precipitation periods bare ground can be very high for brief periods of time.

5. **Number of gullies and erosion associated with gullies:** None.

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

7. **Amount of litter movement (describe size and distance expected to travel):** None.

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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):** Average 4 to 6 rating.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Use soil series description for depth, color and structure of A horizon/surface layer.
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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):** No compaction layer should be present. Some soils may have a naturally occurring platy layer at the surface.
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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: Drier precipitation cycles: Mid cool-season rhizomatous grasses>> mid cool-season bunchgrasses >
Wetter precipitation cycles: Grass-likes = forbs >
- Sub-dominant: Drier precipitation cycles: short warm-season grasses >
Wetter precipitation cycles: mid cool-season rhizomatous grasses > short warm-season grasses
- Other: Drier precipitation cycles: Forbs > grass-likes
Wetter precipitation cycles: Mid cool-season bunchgrasses
- Additional: Other grasses in F/S groups occur in minor amounts. Due to differing root structure and distribution, Kentucky bluegrass and smooth brome grass 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 or no evidence of plant mortality or decadence.
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14. **Average percent litter cover (%) and depth (in):** Plant litter is in contact with soil surface.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2000 3500 4500 lbs./acre air dry depending upon growing conditions
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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, Kentucky bluegrass, smooth brome grass, Russian olive.

17. **Perennial plant reproductive capability:** All species exhibit high vigor relative to climatic conditions. Do not rate based solely on seed production. Perennial grasses should have vigorous rhizomes or tillers.
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