USDA Natural Resources
Conservation Service

# Ecological site R063AY019SD
# Closed Depression

Accessed: 04/20/2024

## 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 | 05/08/2010 |
| Approved by | Stan Boltz |
| 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):** 0 to 10 percent is typical during normal precipitation cycles. Considerably higher amounts can occasionally occur after flooding/drying cycles, up to 50%.

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):** Litter falls in place. Little movement occurs.

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 can range widely. Readings of 2-3 are not uncommon, but can range up to 5-6. Surface organic matter adheres to the soil surface, but due to the inherent content of soluble salts in these soils, flocculation can readily occur. Soil surface fragments can dissolve quickly when dipped in distilled water.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A-horizon should be 4 to 16 inches thick with dark gray colors when moist. Structure typically is thin platy to subangular blocky in the A-horizon.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Infiltration is greatly reduced on this site due to the nature of the soils. Plant composition changes have little effect. Default rating of none to slight is acceptable.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** A-horizon naturally has some platy structure. Compaction layers, if formed by management, do not typically persist. Compaction will be difficult to determine. Evidence of compaction can be confirmed by signs of recent concentration of livestock.

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:

    Sub-dominant:

    Other:

    Additional: Functional/structural groups can be highly variable due to periodic flooding and drying cycles. Cool-season rhizomatous grasses can dominate during normal precipitation periods. Forbs may dominate following wet periods, and rushes, sedges, and spikerushes can be sub-dominant during and after wet periods.

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.

14. **Average percent litter cover (%) and depth ( in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Production ranges from 2,000-4,500 lbs./acre (air-dry weight). Reference value production is 3,500 lbs./acre (air-dry weight).

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

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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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