USDA Natural Resources
Conservation Service

Ecological site R083CY004TX
Shallow Sandy Loam

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

Indicators

1. **Number and extent of rills:** Infrequent.

2. **Presence of water flow patterns:** Rare.

3. **Number and height of erosional pedestals or terracettes:** Infrequent.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** May approach 15 percent during extended drought periods.

5. **Number of gullies and erosion associated with gullies:** None in reference conditions, but soil is susceptible to water erosion if not covered.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous and some small woody

litter movement may occur during intense rainfall events. Movement distance should be short.

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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):** Under canopy higher values can be expected 5 to 6. Within interspaces, a stability rating of 4 may not be uncommon.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface is 0 to 1 inch thick; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak medium platy structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine roots; neutral; abrupt smooth boundary.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant runoff can occur on this site during intense rainfall events. Due to its droughty nature, interspaces conducive to water movement are common.

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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):** Overall soil profile is 18 inches or less to root restrictive 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: Midgrasses >

    Sub-dominant: Shortgrasses >> Forbs = Shrubs/Vines/Trees

    Other:

    Additional: Drastic differences are present as you depart from the reference community.

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality among hebaceous plants can be common during extended drought when coupled with heavy termite use.

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14. **Average percent litter cover (%) and depth (in):** Litter is primarily herbaceous.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,200 to 3,000 pounds per acre.

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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: Invasion by brush plants include guajillo, blackbrush, and mesquite. Herbaceous invaders include Kleberg bluestem.

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17. **Perennial plant reproductive capability:** All perennial species should be capable of reproducing every year unless disrupted by extended drought, overgrazing, wildfire, insect damage, or other events occuring immediately prior to, or during the reproductive phase.
