USDA Natural Resources
Conservation Service

Ecological site R081AY311TX
Shallow 14-19 PZ

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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:** None.

2. **Presence of water flow patterns:** None to few. Erosion which might cause rills, flow patterns and pedestals and terracettes would have occurred only if intense rainstorms occurred during extended drought or shortly after an intense wildfire.

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Less than 10 percent bare ground. Small and non-connected areas. Lower slopes would have less bare ground.

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

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Minimal movement of fine litter for short distances.

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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):** Erosion stability values estimated at 5 to 6.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface layer is dark grayish-brown clay loam 10 to 20 inches thick. Structure is moderate, fine and medium blocky. There are many fine and medium roots throughout profile. SOM is high.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Midgrasses provide excellent infiltration and slow runoff. Except on steeper slopes runoff is essentially nil but when rainfall exceeds sites ability to hold water the runoff is free of erosive action.

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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. Rock layer at 10 to 20 inches restricts water and root penetration.

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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: warm-season midgrass

Sub-dominant: warm-season shortgrass

Other: forb

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal. Grasses will almost always show some mortality and decadence, especially under drought conditions.

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14. **Average percent litter cover (%) and depth (in):** Interspaces between plant canopys essentially covered with various sizes of litter and mulch. Wildfires, natural herbivory and/or extended drought might reduce litter to none.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,200 pounds per acre in years with below average moisture, 2,140 pounds per acre in good moisture years.

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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:** Mesquite, pricklypear, broom snakeweed, agarito, acacia, sumacs, junipers, Texas persimmon, and condalia.

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17. **Perennial plant reproductive capability:** Good. All species should be capable of reproducing except during periods of prolonged drought, heavy natural herbivory or intense fire. Recovery from these disturbances will take 2 to 10 years.