USDA Natural Resources
Conservation Service

Ecological site R077DY046TX
Sandy 12-17" 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 to slight.

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

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 20 to 25%.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** Moderate.

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7. **Amount of litter movement (describe size and distance expected to travel):** Slight to moderate.

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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):** Not resistant to surface erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Fine sand single grain surface and very low SOM.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Basal cover and density with moderate interspaces should make rainfall impact minimal. This site has rapid permeability, runoff is slow and available water holding capacity is low.

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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.

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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 tallgrasses >

Sub-dominant: Warm-season midgrasses > Warm-season shortgrasses > Shrubs >

Other: Forbs > Cool-season grasses

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Grasses due to their growth habits will exhibit some mortality and decadence, though minimal.

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

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,000 to 2,500 lbs/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:** Sand sagebrush, Sand shinoak, Broom snakeweed, Yucca, and Mesquite can become invasive.

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17. **Perennial plant reproductive capability:** All plant species should be capable of reproduction except during periods of prolonged drought conditions, heavy natural herbivory or intense wildfires.
