USDA Natural Resources
Conservation Service

Ecological site R051XY275CO
Deep Sands 7-9 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	Kirt Walstad
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:** Pedestalled plants are common.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 30% or less bare ground, with bare patches ranging from 6-15 inches in diameter. Prolonged drought or wildfire events will cause bare ground to increase upwards to 30-50% with bare patches ranging from 15-30 inches in diameter.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind scouring/blowouts are inherent to the site. Soil movement can intensify with disturbances such as wildfire, wildlife, or extended drought.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter will move on this site. Interspaces can be void of litter. Litter collects around base of established vegetation.

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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):** Stability class rating anticipated to be 2-3 in interspace at soil surface.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface soils are sandy. The A-horizon averages 8 inches in depth with a grayish brown color. Single grain and loose.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant community composition has relatively little effect on infiltration and runoff on this site. Infiltration rates are high and permeability is rapid.

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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: cool season bunchgrass >>

    Sub-dominant: warm season bunchgrass > cool season rhizomatous grass = shrubs = forbs

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal. Decadence may exist on areas inaccessible to grazing animals.

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14. **Average percent litter cover (%) and depth (in):** 15-25% litter cover at 0.25 inch depth. Litter cover during and following drought can range from 10-15% and 5-10% following wildfire.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 500 lbs./ac. low precipitation years; 900 lbs./ac. average precipitation years; 1200 lbs./ac. high precipitation years. After extended drought, production will be reduced to 200 – 500 lbs./ac. or more.

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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: Invasive plants should not occur in reference plant community.

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17. **Perennial plant reproductive capability:** The only limitations are weather-related, wildfire, natural disease, and insects that may temporarily reduce reproductive capability.
