USDA Natural Resources
Conservation Service

Ecological site R009XY012ID
South Slope Loamy 12-16 PZ PSSPS-POSE

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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	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills can occur on this site. If rills are present they are likely to occur on the steeper slopes and immediately following wildfire.

2. **Presence of water flow patterns:** Water-flow patterns can occur on this site. When they occur, they are short and disrupted by cool season grasses and are not extensive.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are rare on this site and Terracettes are common. Terracettes develop on the uphill side of larger perennial grasses. This accumulation of soil is from concentrated flow and hoof/foot traffic.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Ranges from 50-60%.

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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:** Are usually not present. Immediately following wildfire some soil movement may occur on lighter textured soils.

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter in the interspaces may move up to 3 feet following a significant run-off event. It generally moves onto terracettes. Coarse litter generally does not move except on the steeper slopes. Litter is also moved mechanically by hoof/ foot traffic.

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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):** Values should range from 4 to 6 but needs to be tested.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The surface horizon is typically 3 inches thick. Structure is moderate fine and very fine granular. Soil organic matter (SOM) ranges from 2 to 4 percent.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Bunchgrasses, especially deep-rooted perennials, slow run-off and increase infiltration.

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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):** Is not present.

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: Deep rooted perennials with fibrous root systema are needed for soil stability. cool season deep rooted perennial bunchgrasses

    Sub-dominant: Deep rooted perennials with fibrous root systema are needed for soil stability. perennial forbs

    Other: Deep rooted perennials with fibrous root systema are needed for soil stability. shallow rooted bunchgrasses

    Additional: Deep rooted perennials with fibrous root systema are needed for soil stability.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Decadence in the larger bunchgrasses can occur on this site. Mortality can occur following extended drought.

14. **Average percent litter cover (%) and depth (in):** Additional litter cover data is needed but is expected to be 5-10 percent to a depth of <0.1 inches.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Is 900 pounds per acre (1008 kilograms per hectare) in a year with normal temperatures and precipitation. Perennial grasses produce 70-80 percent of the total production, forbs 15-25 percent, and shrubs T-5 percent.

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: Includes cheatgrass, soft chess, ventenata, bulbous bluegrass, medusahead, Fendler threeawn, tarweed, curlycup gumweed, spotted and diffuse knapweed, dalmation toadflax, Mediterranean sage, Scotch thistle, Rush skeletonweed, and yellow star-thistle.

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17. **Perennial plant reproductive capability:** All functional groups have the potential to reproduce in most years.
