USDA Natural Resources
Conservation Service

Ecological site R011XY021ID
South Slope Stony 8-12 PZ ARTRW8/PSSPS

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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 due to steep slopes, low water-holding capacity and percent bare ground. Gravel and stones on the surface reduces erosion.

2. **Presence of water flow patterns:** water-flow patterns are common on this site. When they occur they may be long, continuous, and extensive.

3. **Number and height of erosional pedestals or terracettes:** both can occur on this site but are not extensive. Terracettes develop uphill from the large bunchgrasses and shrubs.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** ranges from 5-10 percent.

5. **Number of gullies and erosion associated with gullies:** does not occur on this site.

6. **Extent of wind scoured, blowouts and/or depositional areas:** usually does not occur.

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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 5 feet or further following a significant run-off event. Terracettes and rocks can trap fine litter. Coarse litter generally does not move.

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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):** No data.

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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. Tall shrubs accumulate snow in the interspaces. Terracettes provide a favorable micro-site for vegetation establishment which further increases 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):** not present.

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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 deep-rooted perennial bunchgrasses

    Sub-dominant: tall shrubs

    Other: perennial forbs

    Additional: shallow rooted grasses

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Wyoming big sagebrush and antelope bitterbrush will become decadent in the absence of fire and ungulate grazing. Grass and forb mortality will occur as tall shrubs increase.

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14. **Average percent litter cover (%) and depth (in):** annual litter cover in the interspaces will be 5-10 percent to a depth of <0.1". Under the mature shrubs litter is greater than 0.5 inches. Fine litter can accumulate on the terracettes and behind surface stones.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** is 600 lbs. per acre in a year with normal precipitation and temperatures. Production is normally low due to low infiltration, steep south aspect and low to moderate water capacity. Perennial grasses produce 50-60 percent of the

total, forbs 10-20 percent, and shrubs 25-35 percent.

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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:** includes cheatgrass, medusahead rye, bulbous bluegrass, rush skeletonweed, scotch thistle, andspotted and diffuse knapweed.

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