USDA Natural Resources
Conservation Service

Ecological site R025XY036ID
SOUTH SLOPE LOAMY 12-16

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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.

Author(s)/participant(s)	
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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 immediately following wildfire. Rills are most likely to occur on soils with surface textures of silt loam and clay loam.

2. **Presence of water flow patterns:** Water-flow patterns occur on this site. When they occur, they are short and disrupted by cool season grasses and tall shrubs and are not extensive. Gravelly surface texture interrupts flows.

3. **Number and height of erosional pedestals or terracettes:** Both occur on this site but are not extensive. In areas where flow patterns and/or rills are present, a few pedestals may be expected. Terracettes occur uphill from tall shrub bases and large bunchgrasses.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** On sites in mid-seral status, bare ground may range from 25-45 percent.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind-scoured, blowouts and/or deposition areas usually are not present. Immediately following wildfire, some soil movement may occur on lighter textured soils.

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. Coarse litter generally does not move. Gravels on the surface help reduce fine litter movement.

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 4-6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The surface horizon is typically 5 to 16 inches thick. Structure typically includes moderate fine granular. Soil organic matter (SOM) ranges from 2 to 4 percent.

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 catch blowing snow in the interspaces.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compaction layer 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: Cool season, deep-rooted perennial bunchgrasses>>tall shrubs

    Sub-dominant: Perennial forbs>shallow rooted bunchgrasses

    Other:

    Additional:

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

14. **Average percent litter cover (%) and depth (in):** Additional litter cover data is needed but is expected to be 15-20 percent to a depth of 0.1 inches. Under mature shrubs, litter is >0.5 inches deep and is 90-100 percent ground cover.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual production is 900 pounds per acre (1008 kilograms per hectare) in a year with normal temperatures and precipitation. Perennial grasses produce 40-55 percent of the total production, forbs 15-20 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:** Invasive Plants include bulbous bluegrass, rush skeletonweed, musk and scotch thistle and diffuse and spotted knapweed. Cheatgrass can invade the site at the lower elevations.

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