USDA Natural Resources
Conservation Service

Ecological site R025XY028ID
LOAMY BOTTOM 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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Date	06/13/2007
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills are not common on this site. If the site is degrading due to gully down-cutting, rills may occur on the side slopes of the gully.

2. **Presence of water flow patterns:** Water-Flow patterns are common on this site. When they occur, they are long, often running the length of the site and disrupted by cool season grasses and tall shrubs. Water flow patterns are also commor from run-in from the adjacent uplands.

3. **Number and height of erosional pedestals or terracettes:** Pedestals and/or terracettes are rare on this site.

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 40-60 percent.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** 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 6 feet or more following a significant run-off event. 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 4-6 .

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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 4 to 24 inches thick. Structure typically includes moderate thin and medium platy, weak fine, moderate medium and coarse granular, and moderate fine subangular blocky. Soil organic matter (SOM) ranges from 1 to 5 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. Tall shrubs accumulate snow in the interspaces.

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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>perennial forbs>shallow rooted bunchgrasses

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Basin wildrye, basin big sagebrush and antelope bitterbrush, when present, 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):** Additional litter cover data is needed but is expected to be 20-25 percent to a depth of 0.2 inches. Under mature shrubs and basin wildrye, 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):** 3500 pounds per acre (3900 Kg/ha) in a year with normal precipitation and temperatures. Perennial grasses produce 70 percent of the total production, forbs 10 percent and shrubs 20 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:** Invasive Plants include cheatgrass, bulbous bluegrass, leafy spurge, whitetop, annual kochia, annual mustards, Russian thistle, rush skeletonweed, Canada, musk and scotch thistle and diffuse and spotted knapweed.

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