

Ecological site R009XY003ID Loamy 16-22 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 | 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 or clay loam and on slopes greater than 15%.

2. **Presence of water flow patterns:** Water-flow patterns occur on this site. When they occur, usually on slopes >15%, they are short and disrupted by cool season grasses, tall shrubs, and an occasional surface stone. They are not extensive.

3. **Number and height of erosional pedestals or terracettes:** Both can 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 bases of tall shrubs and large bunchgrasses.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** May range from 10-20 percent but additional data is needed..

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** Blowouts and 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. 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):** Structure ranges from weak fine granular and sub angular blocky to weak thin platy. Soil organic matter (SOM) ranges from 2 to 6 percent. The A or A1 horizon is typically 3 to 5 inches thick and very dark brown when moist.
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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.
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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: perennial forbs
- Other: tall shrubs
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Bluebunch wheatgrass and Idaho fescue will become decadent in the absence of normal fire frequency and ungulate grazing. Decadence is usually in the form of litter build-up in the crown of the plant. Over an extended period of time the center of the plant may die.
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14. **Average percent litter cover (%) and depth (in):** Additional litter cover data is needed but is expected to be 15-30 percent to a depth of 0.1 inches. Under mature shrubs litter is >0.5 inches deep and is 90-100 percent ground cover.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Is 1700 pounds per acre (1890 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 0-2 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, bulbous bluegrass, ventenata, Kentucky bluegrass, curlycup gumweed, St. Johnswort, rush skeletonweed, musk, yellow star, and scotch thistle, and diffuse and spotted knapweed.
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17. **Perennial plant reproductive capability:** All functional groups have the potential to reproduce in most years.
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