

Ecological site R012XY004ID Gravelly Loam 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

- Number and extent of rills:** Rills: can occur on this site but are not extensive. They are most likely to occur immediately following a wildfire and on slopes greater than 20 percent. Surface gravels reduce rill formation.

- Presence of water flow patterns:** Water-Flow Patterns: can occur on this site when slopes are greater than 20 percent. When they do occur, they are short, disrupted by cool season perennial grasses and tall shrubs and are not extensive.

- Number and height of erosional pedestals or terracettes:** Pedestals and/or Terracettes: a few pedestals and terracettes can occur on this site on slopes greater than 20 percent and where rills and water flow patterns are present. They are not extensive. Surface gravels reduce the formation of pedestals.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground: bare ground ranges from 50-60 percent but data is needed to verify.

- 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:** Wind-Scoured, Blowouts, and/or Deposition Areas: are rare.
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7. **Amount of litter movement (describe size and distance expected to travel):** Litter Movement: fine litter in the interspaces may move up to 2-3 feet or further following a significant run-off event and on slopes greater than 20 percent. 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):** Soil Surface Resistance to Erosion: values should range from 3 to 5 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):** Soil Surface Loss or Degradation: the A or A1 horizon is typically 2 to 10 inches thick. Structure ranges from weak, moderate very fine or fine granular, to weak, moderate, strong thin or thick platy to weak very fine, fine or medium subangular blocky. Soil organic matter (SOM) ranges from 0.8 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:** Plant Community Composition and Distribution Relative to Infiltration: bunchgrasses, especially deep-rooted perennial species, slow run-off and increase infiltration. Shrubs catch snow in the interspaces. Terracettes provide a favorable micro-site for vegetation establishment, which further increases infiltration. Surface gravels help slow surface water movement 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):** Compaction Layer: 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: Functional/Structural Groups: cool season deep-rooted perennial bunchgrasses >>tall shrubs> perennial forbs> shallow rooted grasses.
- Sub-dominant:
- Other:
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant Mortality/ Decadence: Wyoming big sagebrush 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):** Litter Amount: 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.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual Production: is 425 lbs. per acre in a year with normal precipitation and temperatures. Perennial grasses produce 55-70 percent of the total, forbs 5-15 percent and shrubs 20-30 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: includes cheatgrass, rush skeletonweed, scotch thistle, spotted and diffuse knapweed, Russian thistle, mustard. clasping pepperweed, beggar ticks, tansymustard, Jim Hill tumbledustard, yellow salsify, burr buttercup, and halogeton.
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17. **Perennial plant reproductive capability:** Reproductive Capability of Perennial Plants: all functional groups have the potential to reproduce in normal years.
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