

Ecological site R051XY281CO Mountain Outwash

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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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Date	12/14/2004
Approved by	Curtis Talbot
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:** None to slight. If present, short and discontinuous and apparent following intense rainfall events.

- 2. Presence of water flow patterns:** None, except following high intensity storms. Flow paths if present will be short (1-3 feet), with minimal evidence of past or current soil deposition.

- 3. Number and height of erosional pedestals or terracettes:** Very minor, if present, terracettes may occur in flow paths following intense storms.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5% or less bare ground, with bare patches generally less than 3-5 inches in diameter. Extended drought can cause bare ground to increase upwards to 5-10% with bare patches reaching upwards to 6-10 inches in diameter.

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

- 6. Extent of wind scoured, blowouts and/or depositional areas:** None

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7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement is minimal and short (6-12 inches).
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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):** Stability class rating anticipated to be 4-5 in the interspaces at soil surface.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface soil textures range from gravelly sandy loam, cobbly sandy loam, very gravelly sandy loam, very gravelly loam, and cobbly loam. The A-horizon is light brownish gray that can extend from 4 to 16 inches thick. Structure is typically weak medium granular, moderate fine granular structure or weak fine granular structure.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub canopy and root structure reduces raindrop impact and slows overland flow providing increased time for infiltration to occur. Extended drought reduces grass, forb, and shrub production causing decreased infiltration and increased runoff following intense storms.
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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):** None
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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: shrubs >
- Sub-dominant: warm season bunchgrass > cool season bunchgrass = cool season rhizomatous >
- Other: forbs
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimum. Expect some natural mortality and decadence on bunchgrasses and shrubs.
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14. **Average percent litter cover (%) and depth (in):** 10-20% litter cover at 0.25 inch depth. Litter cover during and following extended drought ranges from 5-10%.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 250 lbs./ac. low precip years; 550 lbs./ac. average precip years; 850 lbs./ac. above average precip years. After extended drought, production will be significantly reduced to 200 – 400 lbs./ac. or more.
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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: None
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17. **Perennial plant reproductive capability:** The only limitations are weather-related, natural disease, inter-species competition, wildlife, and insects that may temporarily reduce reproductive capability.
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