

Ecological site R012XY015ID Steep Limestone 12-20 PZ CELE3/PSSPS-FEID

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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 are rare on this site due to the coarse surface fragments. If they are present, they are likely to occur on slopes greater than 20% or immediately following a wildfire.

- 2. Presence of water flow patterns:** Water-flow patterns are rare on this site due to short slope lengths. When they occur, they are short and disrupted by cool season grasses, tall shrubs and surface stones. They are not extensive.

- 3. Number and height of erosional pedestals or terracettes:** Erosional pedestals or terracettes are rare on this site. In areas where slopes approach 20 percent and where flow patterns and/or rills are present, few pedestals may be expected.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 15-30% but more 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:** Wind scoured, blowouts and/or depositional areas do not occur on this site.
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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 3 to 5 but need to be tested.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The A or A1 horizon is typically 2 to 6 inches thick. Structure ranges from weak very fine and fine granular to weak very fine subangular blocky. Soil organic matter (SOM) ranges from 1 to 3 percent.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The tree-like canopy of curleaf mountain mahogany intercepts raindrops and therefore reduces that impact on the soil surface. Bunchgrasses, especially deep-rooted and surface stones 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):** Compaction layer 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: Tree-like shrubs >>>
- Sub-dominant: Cool season, deep-rooted bunchgrasses>>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):** Mortality of curleaf mountain mahogany is usually the result of insect infestations or fire. Outbreaks of a curleaf mountain mahogany defoliating moth *Stamnodes animata* occur at infrequent intervals. Two consecutive years of severe defoliation can cause curleaf mountain mahogany mortality.
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14. **Average percent litter cover (%) and depth (in):** Ranges from 5-10% but additional data is needed.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-**

production): Annual production is 900 pounds per acre (100kg/ha) in a year with normal precipitation and temperatures.

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 species include cheatgrass, bulbous bluegrass, rush skeletonweed, whitetop, musk and scotch thistle and diffuse and spotted knapweed. In addition, Utah juniper and Rocky Mountain juniper can invade the site.
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17. **Perennial plant reproductive capability:** All functional groups have the potential to reproduce most years.
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