

Ecological site R051XY286CO Rocky Foothills

Last updated: 12/11/2024

Accessed: 05/11/2025

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	02/06/2005
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None

2. **Presence of water flow patterns:** Flow paths are short and disconnected. Broken by surface rock and basal cover.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are minimal and associated with flow paths. Debris dams are obvious following rainfall event. Roots not exposed.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expect 5% or less bare ground. Surface and sub-surface rock are inherent to this site.

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** Some movement is expected due to

steepness of slope. Distance varies from 1-3 feet following intense rainfall events.

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 3-4 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):** SOM ranges from 0.5-3%. Soils are shallow, surface texts are very stony, extremely stony, very cobbly loam. gravelly clay loam or very gravelly coarse sandy loam, and are well drained. The A-horizon ranges from 3-14 inches in depth and color ranges from grayish brown to dark grayish brown. Surface structure is weak fine granular, moderate very fine granular structure, or moderate medium 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:** The distribution of diverse grass, shrub, tree/forb canopy and root structure reduces raindrop impact and slows overland flow providing increased time for infiltration to occur. Also, the abundance of rock on the surface, slows velocity of runoff and acts to 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):** 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: cool season bunchgrass >

Sub-dominant: shrubs > cool season rhizomatous grass > trees > warm season bunchgrass >

Other: forbs

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Perennial vegetation should show minimal mortality/decadence except during extreme drought when some decadence or mortality is expected.
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14. **Average percent litter cover (%) and depth (in):** 10-15% litter cover at 0.25 inch depth or less. Extended drought can reduce litter to 5-10%.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 500 lbs./ac. low precip years; 800 lbs./ac. average precip years; 1000 lbs./ac. above average precip years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 100 – 200 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, wildfire, natural disease, inter-species competition, wildlife, and insects that may temporarily reduce reproductive capability.
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