

## Ecological site R048AY303CO Loamy Slopes

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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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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 inherent to this site. Some path lengths will be short, broken up by surface rock, others may be longer and connected.

3. **Number and height of erosional pedestals or terracettes:** Pedestals associated with flow paths. Surface rocks act as small dams, catching litter, debris and/ or sediment.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expect 40-50% bareground. Extended drought can cause bare ground to increase. Surface and sub-surface rock are inherent to this site.

5. **Number of gullies and erosion associated with gullies:** Lack of ground cover and steepness of slope contribute to occasional gullies.

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):** Some movement is expected. Distance varies from 1-5 feet following intense rainfall events.
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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 2-4 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):** Surface soils are moderately deep to deep stone filled and well drained, formed in glacial outwash and/ or sandstone. The A-horizon ranges from 0-8 inches in depth and color ranges from reddish brown to brown. Surface structure is moderate medium to coarse granular.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Lack of understory vegetation, shrub dominance and inherent interspaces between plants allow for overland flow, providing a lost opportunity for infiltration to occur. The composition of the plant community has less effect on infiltration and runoff than does effects of slope and rock.
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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: cool season bunchgrass > forbs >
- Other: cool season rhizomatous grass
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal, except for weather related.
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14. **Average percent litter cover (%) and depth ( in):** 20-30% litter cover at 0.25 inch depth. Extended drought can reduce litter to 10-15%.
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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 percip years; 900 lbs./ac. average precip years; 1200 lbs./ac. above average precip years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 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: Cheatgrass
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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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