

## **Ecological site R048AA235CO Dry Exposure Gunnison Basin LRU**

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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:** Slight on slopes of less than 10 percent. Rock fragments help to protect the surface. Rills may be more defined on slopes of 15 to 25 percent, especially following intense storms.

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2. **Presence of water flow patterns:** Slight or moderate, depending on the percent slope. Flow paths are more apparent on slopes of more than 15 percent.

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3. **Number and height of erosional pedestals or terracettes:** Slight or moderate. Frost heaving of shallow-rooted plants should not be considered an indicator of erosional pedestaling. Pedestals may occur more frequently on slopes that are steeper and exposed to wind.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 15 to 25 percent. Exposed surface gravel and bedrock are inherent to this site and are considered to be rock. Extended drought may result in an increase in bare ground.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind scouring is possible any time of year in areas that do not have rocks or other fragments on the surface.
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7. **Amount of litter movement (describe size and distance expected to travel):** Extensive fine litter from the movement of grasses and perennial and annual forbs by wind and during thunderstorms in summer. More persistent, larger woody litter from shrubs expected to remain in place except during major disturbances.
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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 average 1 to 3 in 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):** The A horizon is gravelly sandy loam to gravelly loam and has fine or medium gravel on the surface. It is 0 to 2 inches deep and is grayish brown to very dark grayish brown. The soils are shallow and have weak 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 perennial herbaceous plants help to slow runoff and increase infiltration. Low basal and canopy cover and inherent interspaces among plants allow for some overland flow and loss of 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. The subsurface argillic horizon common in the soils should not be interpreted as compaction.
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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: Dominant Native Non-Sprouting Shrub > Subdominant Perennial Native Cool Bunchgrasses > Dominant Perennial Native Cool Bunchgrasses >
- Sub-dominant: Occasional Native Perennial Cool Bunchgrasses > Occasional Native Non-sprouting Shrubs > Dominant Native Perennial Forbs >
- Other: Occasional Native Perennial Cool Rhizomatous >= Occasional Perennial Native Forbs >= Occasional Native Perennial Warm Grasses > Occasional Native Sprouting Shrubs > Occasional Annual Native Forbs
- 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, but slight mortality or decadence of shrubs and grasses due to wind desiccation during and following drought or lack of disturbance.
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14. **Average percent litter cover (%) and depth ( in):** 5 to 15 percent litter less than 0.25 inch thick in interspaces between plants and under shrub canopy cover.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 200 pounds per acre in years of low precipitation, 400 pounds per acre in years of average precipitation, and 500 pounds per acre in years of above-average precipitation. After extended drought or during the first growing season following a wildfire, production may be significantly reduced by 100 to 200 pounds per acre 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:** Wind and other weather-related disturbances, wildfire, natural disease, competition among species, wildlife, and insects may temporarily reduce the reproductive capability of the plants.

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