USDA Natural Resources
Conservation Service

# Ecological site R048AA241CO
# Mountain Meadow 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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| Author(s)/participant(s) | Original MLRA wide Reference sheet written by J. Murray, C. Holcomb, L. Santana, F. Cummings, A. Jones, P. Billig, S. Jaouen. Updated for Gunnison Basin by Suzanne Mayne-Kinney |
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| Date | 12/16/2020 |
| 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:** None

3. **Number and height of erosional pedestals or terracettes:** None

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expect < 5% bare ground. Extended drought can cause bare ground to increase.

5. **Number of gullies and erosion associated with gullies:** Rare, and when they due appear they are caused by offsite influences.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Typically slight, however during major flooding events this site slows water flow and captures litter and sediment.

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 5-6 at the soil surface. This site has a lot of organic matter that occurs at the soil surface and is usually hydrophobic and floats.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soils are typically deep, poorly drained with a dark brown/black A-horizon with is ranges from 2 to 21 inches in depth. A litter (Oi soil horizon) may be 0 to 1 inches in depth on top of the soil surface.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, sedge/rushes, forb functional/structural groups and diverse root structure/patterns reduces raindrop impact slows overland flow providing increased time for infiltration to occur.

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 = sedges/rushes >

    Sub-dominant: forbs >

    Other: shrubs

    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, however lack of disturbance results in litter buildup and increased decadence.

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14. **Average percent litter cover (%) and depth ( in):** Litter cover is typically 80-95% under the plant cover and 5-15% between the plant cover. Litter cover depth ranges from 1.0 to 2.0 inches. Litter cover declines during and following extended drought.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2000 lbs./ac. low precip years; 3000 lbs./ac. average precip years; 4000 lbs./ac. above average precip years. After extended drought, production may be reduced by 500 – 1000 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:** Kentucky bluegrass, Canada thistle, Dandelion and other noxious weeds.

17. **Perennial plant reproductive capability:** The only limitations are weather-related, wildfire, natural disease, inter-species competition, wildlife, excessive litter, and insects that may temporarily reduce reproductive capability.