USDA Natural Resources
Conservation Service

# Ecological site R036XB006NM
# Loamy

Last updated: 12/20/2024
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 | 09/26/2023 |
| Approved by | Kirt Walstad |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

## Indicators

1. **Number and extent of rills:** None to very rare. Some minor rilling may be found on slopes greater than five percent after fire and a severe storm event. Rills are widely spaced and short.

2. **Presence of water flow patterns:** None to very rare. Following intense rainfall events, there may be a few and short (3-6 feet) water flow patterns which are not connected. On slopes greater than five percent, following fire and rain, flow patterns may extend up to 10 feet, but still be widely spaced.

3. **Number and height of erosional pedestals or terracettes:** Very minor. Plant or rock pedestals and terracettes are almost always in water flow patterns. Some build up of soil occurs under sagebrush due to settling of wind-blown material.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 40 t0 60%, with bare patches ranging from 6-10 inches in diameter.

5. **Number of gullies and erosion associated with gullies:** No gullies are actively eroding. Some stable gullies may be present in landscape settings where off-site drainage exists, caused by natural events such as fire followed by an intensive rainfall event. Gullies are shallow with blunted edges and are re-stabilizing.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind erosion and deposition is negligible.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter is small and generally will not move over 3 feet, this following intense rainfall.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** The soil stability rating ranges from 4-6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The most common surface soil structure is platy. The A Horizon color often ranges from 10YR 5/3 to 10YR 4/3. The soil surface texture is commonly silt loam and the A horizon thickness ranges from 0 to 4 inches.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The composition/distribution of cool -season grasses, shrubs, and forbs slows the overland flow and reduces raindrop impact while improving infiltration. This facilitates infiltration and minimizes runoff.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Usually none.

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 grasses

    Sub-dominant: shrubs<forbs

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** There is minimal plant mortality and decadence.

14. **Average percent litter cover (%) and depth ( in):** Litter cover ranges from 15 to 25 percent, with an average depth of .25 inches.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** The total production on this site ranges from 600 to 1100 pounds per acre.

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:** Tree species such as pinon and juniper can invade this site causing decreased hydrologic function.

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17. **Perennial plant reproductive capability:** During years with average to above average growing conditions, all perennial plants should have the ability in most years to produce see, tillers, or sprouts. Natural events that cause limitations to plant reproductive capability include: wildfire, drought, natural disease, inter-species competition, insect cycles, and wildlife activity.

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