USDA Natural Resources
Conservation Service

Ecological site R010XC054OR
SR Mountain Shallow South 12-16 PZ

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	09/09/2009
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to some, moderate to severe sheet and rill erosion hazard.

2. **Presence of water flow patterns:** None to some

3. **Number and height of erosional pedestals or terracettes:** None to very few (some frost heaving).

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 40 to 60%.

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** Fine, limited movement.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** stability values should range from 3 to 5, but needs to be verified.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The soil surface structure varies from weak to moderate, very fine and fine granular and subangular blocky. The SOM ranges from 1 to 4 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate to significant plant cover (40-60%) mediates the rainfall impact even on steeper slopes (40-60%). The root mass of perennial bunchgrasses provides significant soil stability.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None, depth to bedrock or an indurated pan is 10-20 inches.

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: Deep-rooted, perennial, cool season bunchgrasses>

    Sub-dominant: Shallow-rooted, perennial, cool season bunchgrasses>

    Other: Tall shrubs > Forbs

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mountain big sagebrush will become decadent in the absence of normal fire frequency and ungulate grazing. Grass and forb mortality will occur as tall shrubs increase. Normal decadence would be expected in the bluebunch wheatgrass. This would be evident by the dead centers in the plants.

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 900; Normal: 600; Unfavorable: 400 lbs/ac/yr.

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: Knapweed, leafy spurge, and dalmation toadflax.

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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually.
