

Ecological site R028BY017NV LOAMY 5-8 P.Z.

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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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| Contact for lead author | State Rangeland Management Specialist |
| Date | 06/20/2006 |
| Approved by | P.Novak-Echenique |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

Indicators

- 1. Number and extent of rills:** Rills are none to rare. A few can be expected on steeper slopes in areas subjected to summer convection storms or rapid spring snowmelt. These are short (<5 ft) and stable.

- 2. Presence of water flow patterns:** Water flow patterns are often numerous in areas subjected to summer convection storms. Flow patterns relatively short (<10 ft.) and stable.

- 3. Number and height of erosional pedestals or terracettes:** Pedestals are none to rare with occurrence typically limited to areas within water flow patterns. Frost heaving of shallow rooted plants is not considered a "normal" condition.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground \pm 50-70% depending on amount of surface rock fragments.

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

- 6. Extent of wind scoured, blowouts and/or depositional areas:** None - wind scouring would occur after a severe wildfire.

7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter (foliage from grasses and annual & perennial forbs) is expected to move the distance of slope length during intense summer convection storms or rapid snowmelt events. Persistent litter (large woody material) will remain in place except during large 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):** Soil stability values should be 2 to 4 on most soil textures found on this site.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface structure is typically fine to medium platy or prismatic. Soil surface colors are light grays and soils are typified by an ochric epipedon. Surface textures are loams, silt loams and very fine sandy loams. Organic carbon of the surface 2 to 3 inches is less than 1 percent.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Sparse shrub canopy and associated litter provide some protection from raindrop impact and opportunity for snow capture.
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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):** Compacted layers are none. Platy or massive structure or duripans are not to be interpreted as compacted layers.
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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: Reference State: Salt desert shrubs (shadscale & bud sagebrush) >> deep-rooted, cool season, perennial bunchgrasses. (By above ground production)
- Sub-dominant: Shallow-rooted, cool season, perennial bunchgrasses > associated shrubs > deep-rooted, cool season, perennial forbs = fibrous, shallow-rooted, cool season, perennial forbs = annual forbs. (By above ground production)
- Other: succulents, microbial crusts
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Dead branches within individual shrubs are common and standing dead shrub canopy material may be as much as 35% of total woody canopy; mature bunchgrasses commonly ($\pm 25\%$) have dead centers.
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14. **Average percent litter cover (%) and depth (in):** Between plant interspaces 5 to 15% and depth ($\pm \frac{1}{4}$ in.)
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** For normal or average growing season (thru May) ± 300 lbs/ac; Spring moisture significantly affects total production. Favorable years ± 400 lbs/ac and unfavorable years ± 200 lbs/ac.

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: Potential invaders include halogeton, Russian thistle, annual mustards, bur buttercup, and cheatgrass.

17. **Perennial plant reproductive capability:** All functional groups should reproduce in average and above average growing season years. Little growth or reproduction occurs in extreme drought years.
