

## **Ecological site R028AY007NV GRAVELLY BARREN FAN**

Accessed: 04/26/2024

### 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	04/02/2014
Approved by	
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 rills can be expected particularly in areas subjected to summer convection storms or rapid spring snowmelt. They will begin healing during the following growing season.

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2. **Presence of water flow patterns:** Water flow patterns are none to rare. Water flow patterns may commonly occur in areas subjected to summer convection storms. Flow patterns are short (<1m) and not connected.

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3. **Number and height of erosional pedestals or terracettes:** Pedestals are none to rare with occurrence typically limited to area within water flow patterns.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground +50%; surface rock cover up to 30%

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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:** Minor evidence of wind-scouring with slight depositional mounding at base of shrubs and grasses. This site is subject to severe wind erosion if the vegetative cover is lost.

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter (foliage from grasses and annual & perennial forbs) expected to move 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. Areas of this site occurring on soils that have a physical crust will probably have stability values less than 3.
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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 moderate thin platy. Soil surface colors are light grays and soils are typified by an ochric epipedon. Surface textures are gravelly loams. Organic matter 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 break raindrop impact. Perennial bunchgrasses and galleta grass increase infiltration and reduce runoff.
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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. Massive subsurface structure or subsoil argillic horizons 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: Low-statured shrubs (pygmy sagebrush)
- Sub-dominant: deep-rooted, cool season, bunchgrasses > associated shrubs > warm season grasses = shallow-rooted, bunchgrasses = deep-rooted, cool season, perennial forbs > fibrous, shallow-rooted, perennial forbs > annual forbs
- Other: evergreen trees, microbiotic 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 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 5-15%, <1/4 inch depth
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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 June)  $\pm 225$  lbs/ac; Favorable years 350 lbs/ac; Unfavorable

years: 150 lbs/ac

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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: Potential invaders include cheatgrass, halogeton, Russian thistle and annual mustards
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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 or extended drought years.
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