

Ecological site R028AY097NV SHALLOW CALCAREOUS SLOPE 14+ 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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Date	03/06/2015
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. If present, occurrence is limited to steeper slopes after summer convection storms or rapid snow melt.

- 2. Presence of water flow patterns:** Water flow patterns are none to rare. If present, they will be short (<1 m) and disconnected. They will meander and are interrupted by plants and exposed rock.

- 3. Number and height of erosional pedestals or terracettes:** Pedestals and terracettes are none to rare. A few pedestals may occur in water flow patterns. Terracettes are short and stable.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground 10-30%, 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- rock fragments and plants protect soil surface.

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 4 to 6 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 moderate thick platy. Soil surface colors are brownish grays and dark browns and soils are typified by a mollic epipedon. Organic matter of the surface 2 to 3 inches is typically 2 to 4 percent dropping off quickly below. Organic matter content can be more or less depending on micro-topography.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Perennial herbaceous plants (especially deep-rooted bunchgrasses) slow runoff and increase infiltration. Shrubs break raindrop impact and provide opportunity for snow catch and accumulation on site.
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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 not none. Subangular blocky structure should 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 1.1 : Deep-rooted, cool season, perennial bunchgrasses > low shrubs (black sagebrush)
- Sub-dominant: >> shallow-rooted, cool season, perennial grasses > associated shrubs > deep-rooted, cool season, perennial forbs = fibrous, shallow-rooted, cool season, perennial forbs = annual forbs.
- Other: warm season rhizomatous grasses, evergreen trees
- Additional: With an extended fire return interval, the shrub and tree component increases at the expense of the herbaceous component.
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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 shrubs are common and standing dead shrub canopy material may be as much as 35% of total shrub canopy; mature bunchgrasses (<25%) may have dead centers.
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14. **Average percent litter cover (%) and depth (in):** Litter within interspaces (10-25%) and litter depth is $\pm \frac{1}{4}$ inch.
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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 (through June) ± 500 lbs/ac. Favorable years ± 700 lbs/ac and unfavorable years ± 350 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 annual mustards and cheatgrass. With an extended fire return interval, singleleaf pinyon may increase.
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17. **Perennial plant reproductive capability:** All functional groups should reproduce in average (or normal) and above average growing season years. Reduced growth and reproduction occur during extreme or extended drought periods.
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