USDA Natural Resources
Conservation Service

Ecological site R070AY005NM
Shallow Sandstone

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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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Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Minor amount of rilling. Some on steeper slopes.

2. **Presence of water flow patterns:** Some evidence of water flow patterns. Flow patterns one meter caused by overland flow during extreme events.

3. **Number and height of erosional pedestals or terracettes:** Rarely occurring on deeper level site but more evident on steeper shallow less productive parts of site.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 30 to 35 percent Bare Ground, 20 to 25 percent Surface Cobble and Stone, Gravel 1 to 5 percent.

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** Very little litter movement one meter. Litter movement mostly on shallower more steep and less productive sites.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Stability class rating anticipated to be 2-3 inch interspaces at soil surface. These values need verification at reference site.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** (Travessilla) A1-0 to 4 inches; light brownish gray (10YR 6/2) sandy loam, dark grayish brown (10 YR 4/2) when moist; weak fine granular structure; slightly hard when dry, very friable when moist; non-sticky and non-plastic when wet many fine and medium roots common fine pores.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub functional/structural groups and diverse root structure/patterns reduces raindrop impact slows overland flow providing increased time for infiltration to occur. Extended drought reduces short and mid bunchgrasses causing decreased infiltration and increased runoff following intense storm events, especially in bare patch areas if present or exposed sandstone.

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

    Sub-dominant: Warm-season shortgrasses

    Other: Perennial cool-season>Warm-season Tall>shrubs & trees > Perennial forbs.

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal. Expect short/mid bunchgrasses mortality/decadence during or following drought.

14. **Average percent litter cover (%) and depth (in):** Litter production may be reduced during extended drought or wildfire events to less than 10 percent.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** (Low Production 450 pounds per acre) (Average RV Production pounds per acre) (High Production

pounds per acre) Production can be reduced following extended drought or the first growing season following wildfire.

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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:** Piñon and oneseed juniper trees are the potential native invaders into this site. Increased trees into this site also greatly affects herbaceous production grasses and forbs.

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17. **Perennial plant reproductive capability:** All plants should be vigorous, healthy and reproductive depending on disturbances i.e. drought. Plants should have numerous seed heads, vegetative tillers, etc. The only limitations are weather, wildfire, and natural disease that may temporarily reduce reproductive capability.
