USDA Natural Resources
Conservation Service

Ecological site R070AY001NM
Loamy Upland

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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:** None

2. **Presence of water flow patterns:** Typically none, if present (steeper slopes following intense storm events) flow patterns are short and not connected.

3. **Number and height of erosional pedestals or terracettes:** None

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 15 to 25 percent bare ground with bare patches generally less than 5 inches in diameter. Extended drought can cause bare ground to increase and bare area patch size may increase during extended drought conditions.

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

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Minimal and short; usually will occur more prevalent in areas with slope associated.

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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 surface (top few millimeters) resistance to erosion (stability) values are averages; most sites will show a range of values for both plant canopy and interspaces, if different.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface (top few millimeters) resistance to erosion (stability) values are averages; most sites will show a range of values for both plant canopy and interspaces, if different.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** None

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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):** None

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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: Dominant: Warm-season, short bunchgrasses

    Sub-dominant: Cool-season mid rhizomatous>mid cool-season bunchgrass>shrubs,

    Other: Warm-season forbs>leguminous forbs=cool-season forbs=warm-season short stoloniferous>annual native grasses

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** None

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14. **Average percent litter cover (%) and depth (in):** Litter depth will be reduced during and following extended drought ranges, and can be less than 10 percent.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** (Low Production 400 pounds per acre) (Average RV Production 950 pounds per acre) (High Production 1,500 pounds per acre) Production can be reduced following extended drought or in the first growing season following wildfire.

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:** Invasive plants should not occur in reference plant community. However, cheatgrass, Russian thistle, kochia, and other non-native annuals may invade following extended drought if a seed source is available. Oneseed juniper may encroach from adjacent sites with lack of fire.

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.