USDA Natural Resources
Conservation Service

Ecological site R048BY227CO
Dry Loamy Slopes

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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	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to slight.

2. **Presence of water flow patterns:** None to slight. Short and disconnected on slopes > 20%.

3. **Number and height of erosional pedestals or terracettes:** Not significant.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:** None in the reference condition.

6. **Extent of wind scoured, blowouts and/or depositional areas:** No wind scoured and/or depositional areas.

7. **Amount of litter movement (describe size and distance expected to travel):** None to slight on slopes less than or equal to 20%. On steeper slopes expect fine hervaceous litter expected to move 0.5 to 1.0 feet and confined within water

flow paths.

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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):** Estimated to be in the range of 4-5 for the soil stability rating.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Due to diverse plant composition and structure infiltration is good.

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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. Soil profile features are not present that could be mistaken for compaction.

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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: warm season bunch grasses

    Sub-dominant: cool season bunch grasses > shrubs > forbs

    Other: cool season rhizomatous grass > sedge

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** None to slight. Expect an increase in the decadence of the warm & cool season bunchgrasses on slopes that exceed 30%.

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Total annual production (air-dry):
    unfavorable years = 600 pounds per acre
    normal years = 800 pounds per acre
    favorable years = 950 pounds per acre

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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: Degraded states will show a dominance of "low-growth" blue grama and slimstem muhly. Shrubs & forbs that will characterize ecological degradation are fringed sagebrush, gray horsebrush, rabbitbrush species, pingue, and yellow eriogonum.

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17. **Perennial plant reproductive capability:** None. Only weather related events can detract from the reproductive capability of the perennial plants in the reference condition.
