

Ecological site R072XY108KS Loamy Lowland

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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	David Kraft
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 they 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):** 2 percent or less bare ground, with bare patches generally less than 2-3 inches in diameter. Extended drought can cause bare ground to increase to 10-20 percent.

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 litter movement and short travel distances. Extreme flooding events will cause litter to be displaced and/or captured.
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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):** Stability class rating anticipated to be 5-6 in interspace at soil surface.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** These soils are very deep, stratified and often calcareous to the surface. Textures are dominantly loamy and silty, but sandy textures may occur in the lower part of the root zone. Organic matter is generally low to moderate in the surface layer. A horizon is 0 to 12 inches; very dark grayish brown (10YR 3/2) moist; weak medium granular structure.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub canopy and root structure reduces raindrop impact and slows overland flow providing increased time for infiltration to occur. Extended drought may reduce sod forming cool season grass and tall warm season bunchgrasses causing decreased infiltration and increased runoff following intense storms.
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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: Warm season tallgrass 46%; big bluestem>> switchgrass > eastern gamagrass = prairie cordgrass > Indiangrass
- Sub-dominant: Cool season grasses 23%; western wheatgrass >> Canada wildrye > green needlegrass = vine mesquite > slender wheatgrass, needle and thread
- Other: Forbs 10%; Warm season midgrass 7%, little bluestem > sideoats grama: Warm season shortgrass 7%, blue grama = buffalograss; Shrubs 5% and sedges 2%
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** The majority of plants are alive and vigorous. Some mortality and decadence is expected for the site. This in part is due to drought, unexpected wildfire or a combination of the two events. This would be expected for both dominant and subdominant groups.
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14. **Average percent litter cover (%) and depth (in):** Litter cover during and following extended drought ranges from 30-40%.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2500 pounds of production per ac/yr for a below average year, 3500 pounds of production per ac/yr for an above average year. Relative value is 4000 pounds of production per ac/yr.

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, other non-native annuals may invade following extended drought assuming a seed source is available.

17. **Perennial plant reproductive capability:** Plants on site exhibit the required vigor and growth to be able to reproduce vegetatively or by seed.
