

## **Ecological site R072XY103KS Subirrigated**

Accessed: 05/11/2025

### 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.

Author(s)/participant(s)	Original reference sheet created by David Kraft, John Henry, Doug Spencer, and Dwayne Rice in February 2005. Entered information and made minor revisions on #5, #7, #12, #14, #15 by Chris Tecklenburg 2-24-2016.
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Date	02/24/2016
Approved by	David Kraft
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

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

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2. **Presence of water flow patterns:** There is little, if any, evidence of soil deposition or erosion. Water generally flows evenly over the entire landscape.

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3. **Number and height of erosional pedestals or terracettes:** There is no evidence of pedestaled plants or terracettes on the site.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Less than 5% bare ground is found on this site. Cover can be defined as live plants, litter, rocks, moss, lichens, etc.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** There is no evidence of wind erosion creating bare areas or denuding vegetation.
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7. **Amount of litter movement (describe size and distance expected to travel):** Plant litter is distributed evenly throughout the site. During major flooding events this site slows water flow and captures litter and sediment.
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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):** Plant canopy is large enough to intercept the majority of raindrops. A soil fragment will not "melt" or lose its structure when immersed in water for 30 seconds. There is no evidence of pedestaled plants or terracettes. Soil stability scores will range from 5-6.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The topsoil layer has not been disturbed or eroded. Ak horizon 0 to 10 inches; sandy clay loam, very dark gray (10YR 3/1) moist, moderate fine and very fine granular structure; hard, friable; violent effervescence (18 percent calcium carbonate equivalent); moderately alkaline.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** There is no negative effect on water infiltration and/or runoff due to plant composition or distribution. Plant composition and distribution are adequate to prevent any rill formation and/or pedestalling. Inter-spatial distribution is consistent with expectation for the 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):** There is no evidence of compacted soil layers due to cultural practices. Soil structure is conducive to water movement and root penetration.
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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 tallgrasses 65%: big bluestem > switchgrass = indiagrass > prairiecordgrass = sand bluestem
- Sub-dominant: warm season midgrasses 10%: little bluestem > sideoats grama > marsh muhly  
forbs 10%: prairie bundleflower = American licorice = Maximillian sunflower > all other forbs
- Other: cool season grasses 7.5%: Canada wildrye > western wheatgrass > slender wheatgrass > needle and thread.
- Additional: sedges and grasslikes 5%: sedge = scribner's rosette grass = Nebraska sedge  
shrubs 2.5%: false indigo = prairie rose = snowberry
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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 sub-dominant groups.
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14. **Average percent litter cover (%) and depth ( in):** Plant litter is distributed evenly throughout the site. There is no restriction to plant regeneration due to depth of litter. When prescribed burning is practiced there will be little litter the first half of the growing season.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 4000 lbs in representative year. 3000 lbs in a below average precipitation year and 5000 lbs in an above average precipitation year. Vegetative production is 95-100% of normal based upon the ecological site description and the weather the past year. (refer to ecological site description for favorable or unfavorable growing conditions)

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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:** There are no noxious weeds present. Invasive plants make up a small percentage of plant community, and invasive brush species are < 5% canopy.

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

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