

Ecological site R079XY113KS Loamy Floodplain

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

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Less than 10% bare ground is found on this site. Cover can be defined as live plants, litter, rocks, moss, lichens, etc.

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 4-6.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** From Elandco series description:
- A1--0 to 14 inches; dark grayish brown (10YR 4/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; hard, firm; many roots and wormcasts; common fine and medium pores; slightly alkaline; clear smooth boundary. (8 to 20 inches thick)
- A2--14 to 27 inches; very dark grayish brown (10YR 3/2) silty clay loam, very dark brown (10YR 2/2) moist; weak medium subangular blocky structure; hard, firm; many roots and pores; slightly alkaline; clear smooth boundary. (12 to 22 inches thick)
- A3--27 to 40 inches; dark brown (10YR 3/3) silty clay loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; hard, firm; many roots and pores; slightly alkaline; clear smooth boundary. (0 to 20 inches thick)
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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. Interspatial 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: Grasses dominant 68% or 3230 lbs.: big bluestem 1500-2640, Indiangrass 250-715, eastern gamagrass 150-475, switchgrass 150-475, little bluestem 50-240
- Sub-dominant: Grasses subdominant 15% or 710 lbs.: western wheatgrass 150-475, Canada wildrye 50-200, sideoats grama 50-150, composite dropseed 50-150, vine mesquite 50-150

Other: Grasses trace 2% or 95 lbs.: prairie cordgrass 0-100, prairie threeawn 0-25, purple threeawn 0-25

Additional: Forbs Minor 10% or 475 lbs.

Trees and Shrubs Minor 5% or 240 lbs.

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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):** 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):** 3870-6080 lbs/acre. Representative value is 4750 lbs/forage/acre. Below-normal precipitation during the growing season expect 3870 lbs/forage/acre; and above-normal precipitation during the growing season expect 6080 lbs/forage/acre. If utilization has occurred, estimate the annual production removed or expected and include this amount when making the total site production estimate.
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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:** None.
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17. **Perennial plant reproductive capability:** The number and distribution of tillers or rhizomes is assessed relative to the expected production of the perennial, warm-season midgrasses and shortgrasses.
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