Ecological site R073XY108KS
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	David Kraft
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** There are no rills or active headcutting present on the site.

2. **Presence of water flow patterns:** There is no evidence of water flow patterns, soil deposition or erosion on the site.

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

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.

5. **Number of gullies and erosion associated with gullies:** There are no gullies present on the site.

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.

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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 sufficient to intercept the majority of raindrops. Soil organic matter is incorporated into aggregates at the surface, and/or adhesion of decomposing organic matter is present, and/or biological crusts are present on the surface. 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):** OSD from Roxbury series; A1--0 to 51 centimeters) (0 to 20 inches); dark grayish brown (10YR 4/2) silt loam, very dark brown (10YR 2/2) moist; weak fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many worm casts; strong effervescence; slightly alkaline; gradual smooth boundary.

   A2--51 to 78 centimeters (20 to 31 inches); grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist moderate medium granular structure; slightly hard, friable, slightly sticky and slightly plastic; few worm casts; many fine pores; strong effervescence; slightly alkaline; gradual smooth boundary. (Combined thickness of the A horizon is 51 to 152 centimeters (20 to 60 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 community composition or distribution. Plant composition and spatial distribution are adequate to prevent any rill formation and/or pedestalling. Plant rooting patterns, litter production, decomposition processes, and spatial distribution are adequate to establish good infiltration and prevent all runoff.

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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 animal impact or cultural practices.

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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: Tallgrass Dominant 60%; big bluestem 1170-2025, switchgrass 250-400, Indiangrass 200-400, eastern gamagrass 160-260, composite dropseed 0-100, prairie cordgrass 0-100, sand dropseed 0-25

    Sub-dominant: Midgrass Subdominant 15%; sideoats grama 120-225, little bluestem 75-130, purple threeawn 0-25

    Other: Shortgrass minor 5%; blue grama 120-225, buffalograss 0-25
    Cool-season grasses trace 5%; Canada wildrye 0-25, plains bluegrass 0-25, western wheatgrass 120-225, sedge 0-100

    Additional: Forbs Minor component 10%
    Shrubs and Cacti Minor component 3%
    Trees Trace component 2%

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.

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. Plant litter at 45-55% cover, at a depth of .25 of an inch.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 4,500 pounds of production per ac/yr for a below average year, 5,580 pounds of production per ac/yr for an above average year. Relative value is 4,500 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:** There are no noxious weeds present. Invasive plants make up a small percentage of plant community, and invasive brush species are < 5% canopy.

17. **Perennial plant reproductive capability:** The number and distribution of tillers or rhizomes is assessed on perennial plants occupying the evaluation area. No reduction in vigor or capability to produce seed or vegetative tillers given the constraints of climate and herbivory.