Ecological site R079XY133KS
Wet Subirrigated

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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 or ponds 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 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:** None

6. **Extent of wind scoured, blowouts and/or depositional areas:** There is no evidence of wind erosion creating bare areas or denuding vegetation.

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.

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.

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

   A--0 to 8 inches (0 to 20 centimeters); very dark gray (10YR 3/1) loamy fine sand, black (10YR 2/1) moist; weak fine granular structure; slightly hard, friable, nonplastic and nonsticky; slightly acid; clear smooth boundary. (6 to 9 inches thick, 15 to 23 centimeters)

   AC--8 to 15 inches (20 to 38 centimeters); gray (10YR 5/1) loamy fine sand, dark gray (10YR 4/1) moist; common fine prominent yellowish brown (10YR 5/6) mottles; single grain; soft, very friable, nonplastic and nonsticky; slightly acid; gradual smooth boundary. (5 to 15 inches thick, 13 to 38 centimeters)

   C--15 to 80 inches (38 to 203 centimeters); light gray (10YR 7/2) loamy fine sand, light brownish gray (10YR 6/2) moist; common coarse prominent brownish yellow (10YR 6/6) mottles; single grain; loose, soft, neutral.

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 pedastalling. Interspacial distribution is consistent with expectation for the site.

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.

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 90%: prairie cordgrass 1750-2500, eastern gamagrass 300-630, spikerush 250-630, alkali cordgrass 150-315, reed canarygrass 150-315, chairmaker's bulrush 100-250, sedge 100-250, shortbeak sedge 100-250, clustered field sedge 100-250.

    Sub-dominant: A variety of forbs make up 10% of the plant community.

    Other:

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 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):** 6,000-7,200 lbs/acre. Representative value is 7,000 lbs/forage/acre. Below normal precipitation during the growing season expect 6,000 lbs/forage/acre and above normal precipitation during the growing season expect 7,200 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 midgrass and shortgrasses.