Ecological site R073XY112KS
Shallow Limy

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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 (steeper slopes following intense storms) short and not connected.

3. **Number and height of erosional pedestals or terracettes:** None, due to the amount of cover. Pedestals and terracettes are indicators of soil being moved by water and/or wind.

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, with bare patches generally less than 2-3 inches in diameter. Extended drought can cause bare ground to increase. Bare ground is the remaining ground cover after accounting for ground surface covered by vegetation (basal and foliar canopy), litter, standing dead vegetation, gravel/rock, and visible biological crust (e.g., lichen, mosses, algae).

5. **Number of gullies and erosion associated with gullies:** None. There are no channels that are being cut into the soil by moving water. Gullies are not a natural feature of this landscape and site.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None. The vegetative cover in the Reference State is sufficient to limit wind-scoured or blowout areas. This site is not a depositional area for offsite wind erosion.

7. **Amount of litter movement (describe size and distance expected to travel):** None. The inherent capacity for litter movement on a soil is a function of its slope and landscape position.

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. The soil characteristic of this site is resistant to erosion. No physical crusts apparent. 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):** Canlon Series
A1--0 to 4 inches; very dark grayish brown (10YR 3/2) moist, loam; moderate fine granular structure; slightly hard, friable; many fine and medium roots; violent effervescence; moderately alkaline.
AC--4 to 8 inches; dark grayish brown (10YR 4/2) moist, loam; weak fine and medium granular structure; slightly hard, friable; many 1/4 to 1 1/2-inch caliche fragments; violent effervescence.

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.

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: Group 1 Warm-season midgrasses dominant 49%. Little bluestem 435-785, sideoats grama 85-260, plains muhly 0-85.

    Sub-dominant: Group 2 Warm-season tallgrasses subdominant 26%. Big bluestem 260-500, switchgrass 085, Indiangrass 0-85, composite dropseed 0-35, sand dropseed 0-35

    Other: Group 3 Warm-season shortgrasses minor 8%. Blue grama 25-85, buffalograss 0-85, hairy grama 0-85.

    Additional: Group 4 Cool season grasses trace 2%.
    Group 5 Subdominant forb component 13%.
    Group 6 Shrubs and cacti 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 sub-dominant groups.

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14. **Average percent litter cover (%) and depth (in):** Plant litter is distributed evenly throughout the site.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 1,000-2,500 lbs/acre. Representative value is 1750 lbs/forage/acre. Below normal precipitation during the growing season, expect 1000 lbs/forage/acre; and above normal precipitation during the growing season, expect 2500 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:** Invasive or noxious weeds should not occur in the Reference Community. However, cheatgrass, Russian thistle, kochia, and other non-native annuals can invade following extended drought, assuming a seed source is available.

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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.