Ecological site R072XY112KS
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 to minor. Associated with steeper slopes.

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2. **Presence of water flow patterns:** None to minimal on gentle slopes (< 15%). Flow paths should be broken, irregular in appearance. As slope and/or limestone outcrop increase, flow paths become more apparent and may be connected.

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3. **Number and height of erosional pedestals or terracettes:** None to slight on gentle slopes. Expect some evidence of pedestalled plants when slopes exceed 15%.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10% or less bare ground, with bare patches generally less than 3 inches. Extended drought may increase bare ground 5-10%. Exposed limestone is inherent to the site and would not be considered bare ground.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to minor. Steep exposed areas may have small areas of wind souring.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement is associated with water flow patterns and may move as much as 1-3 feet down slope during severe precipitation events, especially on steeper slopes.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Stability class rating anticipated to be 3-4 in interspaces at soil surface.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Average SOM ranges from 1-3%. Soils are typically shallow and well drained. A-horizon ranges from 0-4 inches in depth with a very dark grayish brown color (10YR 3/2) moist. Surface texture is typically loam. Structure is weak medium granular. Caliche (limestone) fragments found on surface.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** A diverse grass, forb, and shrub functional and structural groups as well as diverse root structure and patterns reduces raindrop impact, slows overland flow, providing increased time for infiltration to occur. However, the composition of the plant community has less affect on infiltration and runoff on steeper slopes and limestone outcrop.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None

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: 65% warm, mid and tallgrasses- little bluestem = sideoats grama >> big bluestem > switchgrass > Indiangrass.

    Sub-dominant: 15% shortgrass and cool season- blue grama > buffalograss = hairy grama > plains muhly = needle and thread

    Other: 10% Forbs and legumes 5% other grasses and 5% Shrubs

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** None to slight. Expect slight mortality/decadence during and following extended drought.

14. **Average percent litter cover (%) and depth (in):** 35-50% litter cover at 0.25 inch depth on gentle slopes and 5-15%

on steeper areas and exposed limestone.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 600 lbs./ac. low precip years, 1200 lbs./ac. average precip years, 1600 lbs./ac. high precip years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 300-500 lbs./ac.

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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 plants should not occur in the Reference Plant Community. However, cheatgrass, Russian thistle, kochia, other non-native annuals will invade following extended drought assuming a seed source is available. Blue grama, red threeawn, sand dropseed, threadleaf sedge, locoweeds and milkvetches are the major native (non-invasive) increasers on this site.

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17. **Perennial plant reproductive capability:** The only limitations are weather-related, wildfire, natural disease, and insects that may temporarily reduce reproductive capability.
