Ecological site R041XC318AZ
Sandy Loam 12-16" p.z. Deep

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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	Scott Woodall
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None present on this site.

2. **Presence of water flow patterns:** Water flow paths occupy 10-15% of the area; short (3-5 feet) in length and discontinuous.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are infrequent on long-lived perennial grasses. Approximately 10% of perennial grass plants have pedestals no more than 1 inch above surrounding soil surface. Black grama dominated areas have formed terracettes 2-5 feet apart with a 1-inch elevation difference from above to below the terracette. Bunchgrass dominated areas have formed terracettes 10-15 feet apart with a 1-inch elevation difference from above to below the terracette.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Estimated in 20, 9.6 ft square frames at 22%. Note: this is following several years of regional drought.

5. **Number of gullies and erosion associated with gullies:** None present on this site.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None present on this site.

7. **Amount of litter movement (describe size and distance expected to travel):** All iltter size classes are staying in pace and mask water flow patterns.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** No slake test done. Expect ratings of 4-6 under shrubs and grass canopies and in openings.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak granular; color is 10YR3/2 Dry, 10YR2/2 Moist; thickness to 10+ inches. Lab data from Combate soil series from SRER soil inventory was around 2-3% organic carbon.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Cover estimated in 20, 9.6 ft square frames: Canopy 31%, basal 6%, litter 76%, and gravel 5%. 75-80% of canopy cover is perennial grasses and 5-10% is trees and shrubs. Cover is well dispersed throughout the site.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None present on this site. Penetrometer tests with weight drop distance from top of weight to top of impact ring = 2.24 feet were: average = 3.55 inches, sd = 0.59 inches. Tests outside enclosure on SRER were: average = 1.84, s.d. = 0.22, tests off SRER to east of Exclosure 22 were: average = 1.35m s,d, = 0.24.

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: Perennial mid-grasses (tanglehead, sideoats grama, bush muhly, black grama) > annual forbs & grasses > shrubs > succulents > short grasses (slender grama, Rothrock grama).

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Some. Approximately 50% basal cover of midgrass species and 75-80% basal cover of short grass species has been lost due to prolonged drought.

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 600 lbs/ac unfavorable precipitation, 1100 lbs/ac normal precipitation, 1800 lbs/ac faborable precipitation

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:** Mesquite, Lehmann lovegrass and prickley pear

17. **Perennial plant reproductive capability:** No affected even following several years of prolonged drought period for region. Black grama producing stolons, all other species produce seed.