USDA Natural Resources
Conservation Service

Ecological site R038XA102AZ
Clayey Upland 12-16" p.z.

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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	Byron Lambeth
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:** Water flow patterns occupy less than 10% of the area. They are very short (2-5 ft.) in length and discontinuous.

3. **Number and height of erosional pedestals or terracettes:** Erosional pedestals and terracettes are very uncommon. Vertic soil activity (cracking and churning) continually disturb the soil surface and preclude development of erosional features like these.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10 to 15% (from pace transect)

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

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

7. **Amount of litter movement (describe size and distance expected to travel):** All litter is staying in place.

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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):** Soil slake test values of 4, 5 and 6's across the area. Soil surface has high organic content both under plant canopies and in interspaces.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface structure is granular. A horizon is thick (3-5 inches), has high organic carbon (4-5%) and is very dark colored (10YR 3/2).

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Canopy cover of tobosa is 45% (after several years of drought) and well distributed across the landscape. Basal cover ranges from 8 to 15%.

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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):** None

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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: perennial mid-grass (tobosa)

    Sub-dominant: annual forbs and grasses> cool season grasses> perennial forbs> misc. grasses

    Other: sub-shrubs> succulents> shrubs

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 50% drought mortality on tobosa plants after severe drought from 1996 thru 2004.

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14. **Average percent litter cover (%) and depth (in):** Litter is nearly all herbaceous.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** From ecological site description average annual production is 580 lbs/ac (drought), 1325 lbs/ac (normal year), 2100 lbs/ac (wet year)

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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: mesquite, prickley pear, cane cholla, catclaw acacia, wild oats, red brome, cheatgrass

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17. **Perennial plant reproductive capability:** Not impaired.
