USDA Natural Resources
Conservation Service

Ecological site R081BY323TX
Clay Flat 19-23 PZ

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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	Bryan Christensen
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:** None to slight. Site may receive runoff from adjacent sites.

3. **Number and height of erosional pedestals or terracettes:** None to slight. Minimal pedestals due to erosion. Cracking and shrinking and swelling of the soil profile may give gilgae relief which should not be confused with water erosion patterns and pedestaling.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Less than 10 percent bare ground. Small and non-connected areas. Cracking and swelling of soil may expose bare soil.

5. **Number of gullies and erosion associated with gullies:** None. Flat concave terrain and vegetative cover precludes gullying.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None to slight. Wind hazard is moderate when soil is exposed.

7. **Amount of litter movement (describe size and distance expected to travel):** Minimal movement of fine litter for short distances.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Erosion stability values estimated at 5 to 6. Water erosion hazard of bare soil is slight.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface layer of Tobosa soil is dark grayish brown clay. Structure is weak, medium, and moderate angular blocky. There are medium to few roots to 34 inches in depth.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Reference midgrasses with good distribution and cover provided excellent infiltration and slow runoff. Under normal rainfall, runoff is essentially nil, but when rainfall exceeds the sites ability to hold water, the runoff is free of active erosion.

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: Warm-season midgrasses

    Sub-dominant: Warm-season shortgrasses

    Other: Cool-season grasses = forbs shrubs/vines Trees

    Additional: Tobosagrass was about 20 percent in the reference community but became dominant quickly after disturbance.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal. Grasses will almost always show some mortality and decadence, especially under drought conditions.

14. **Average percent litter cover (%) and depth (in):** Interspaces between plant canopies essentially covered with various sizes of litter and mulch.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 600 pounds per acre in years with below average moisture, 2,000 pounds per acre in average moisture, and 3,000 pounds per acre in above average moisture years. Site may receive extra moisture from adjacent sites and be

highly productive in wet years.

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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, pricklypear, broom snakeweed, agrito, acacia, and condalia.

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17. **Perennial plant reproductive capability:** Good. All species should be capable of reproducing except during periods of prolonged drought, heavy natural herbivory or intense fire. Recovery from these disturbances will take 2 to 5 years.
