USDA Natural Resources
Conservation Service

Ecological site R081BY334TX
Loamy Bottomland 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. Minimal evidence of past or present formation of rills except after recent floods.

2. **Presence of water flow patterns:** Few. Old water patterns are stable. Any formed after flooding stabilizing.

3. **Number and height of erosional pedestals or terracettes:** None to uncommon. Minimal pedestals or terracettes due to erosion except after recent flood.

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 except after recent flood.

5. **Number of gullies and erosion associated with gullies:** None to uncommon due to recent flood. Drainages are represented as stable channels. No signs of erosion and vegetation is common.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Minimal movement of the litter for short distances during normal rainfall. Extensive movement of all classes of litter during extensive flooding.

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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):** Erosion stability values estimated at 4 to 6. Water erosion hazard of soil is moderate.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soils are grayish-brown silty clay loam to 50 inches, structure is fine granular and SOM is high.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The reference community provides good plant distribution and provides excellent infiltration. Under normal rainfall, runoff is essentially nil but when rainfall exceed sites ability to hold water the runoff is free of erosive action.

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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:

    Sub-dominant: Warm-season midgrasses Warm-season tallgrasess Cool-season grasses

    Other: Trees Shrub/Vines = Forbs = Warm-season shortgrasses

    Additional:

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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 during drought conditions.

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

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 2,000 pounds per acre in years with below average moisture, 3,200 pounds per acre in average years and 4,500 pounds per acre in above average moisture years. Site may receive extra moisture from upslope 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, juniper, prickly pear, juniper, tobosagrass, whitebrush, salt cedar, baccharis, pecan, hackberry.

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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 fires. Recovery from these disturbances will take 2 to 5 years.
