USDA Natural Resources
Conservation Service

Ecological site R086AY012TX
Loamy Bottomland

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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:** Water flow patterns are common and follow old stream meanders. Deposition or erosion is uncommon for normal rainfall but may occur during intense rainfall events.

3. **Number and height of erosional pedestals or terracettes:** Pedestals and terracettes are uncommon.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Essentially none. Site has litter filling interspaces between plant bases.

5. **Number of gullies and erosion associated with gullies:** No gullies should be present on side drains into perennial or intermittent streams. Drainageways should be vegetated and stable.

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

7. **Amount of litter movement (describe size and distance expected to travel):** This site is a floodplain with occasional out of bank flow. Under normal rainfall, little litter movement should be expected; however, litter of all sizes may move long distances due to obstructions during high flows.

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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 surface is resistant to erosion. Stability class ranges expected to be 4 to 6.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** 0 to 9 inches thick with colors from reddish brown silty clay loam to dark grayish brown loams and generally weak fine and medium subangular blocky structure. SOM is 0.5 to 3 percent.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Under reference conditions, this bottomland site is dominated by tall grasses and forbs having adequate litter and little bare ground and provides for maximum infiltration and little runoff under normal rainfall events.

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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: Warm-season tallgrasses >

    Sub-dominant: Cool-season grasses >> Warm-season midgrasses > Trees

    Other: Forbs > Shrubs/Vines

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Grasses, trees, and forbs due to their growth habit will exhibit some mortality and decadence, though very slight due to long-lived nature of plants. Open spaces from disturbance are quickly filled by new plants through seedlings and vegetative reproduction (tillering).

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

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 4,000 to 8,500 pounds per acre.

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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: Yellow bluestems, common Bermudagrass, mesquite, elms, huisache, eastern red cedar, osage orange, Chinese tallow.

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17. **Perennial plant reproductive capability:** All perennial plants should be capable of reproducing except during periods of prolonged drought conditions, heavy natural herbivory, prolonged flooding, or intense wildfires.
