USDA Natural Resources
Conservation Service

Ecological site R083AY013TX
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:** Large water flow patterns are expected as this is a bottomland site. Large volume of water can occur during high rainfall events.

3. **Number and height of erosional pedestals or terracettes:** None.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 0 to 5 percent bare ground. Small and non-connected areas due to highly productive site.

5. **Number of gullies and erosion associated with gullies:** Gullies can occur in areas along stream banks where poor vegetative cover occurs.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Minimal and long under normal rainfall intensity.

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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 anticipated to be 5 to 6 at the surface. These values need to be verified.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Dark grayish brown clay loam; moderate, fine, subangular blocky/medium granular structure; hard/slightly firm; common fine roots; few fine calcium carbonate concretions; few snail shells; calcareous; moderately alkaline; Soil organic matter is three to five percent.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** High canopy, basal cover and density with small interspaces should make rainfall impact negligible. This site has well drained soils, deep with 0 to 1 percent slopes should not have detrimental runoff and erosion.

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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 midgrasses >

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

    Other: Forbs

    Additional: Forbs make up 5 percent of species composition, shrubs and trees compose up to 15 percent species composition.

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Perennial grasses will naturally exhibit a minor amount (less than 5%) of senescence and some mortality every year.

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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):** 3,500 to 6,500 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:** Huisache, buffelgrass, King Ranch bluestem, bermudagrass, and Old World bluestems.

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17. **Perennial plant reproductive capability:** All perennial species should be capable of reproducing every year unless disrupted by extended drought, overgrazing, insect damage, or other events occuring immediately prior to, or during the reproductive phase.
