USDA Natural Resources
Conservation Service

Ecological site R084AY050OK
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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Date	04/01/2005
Approved by	Bryan Christensen
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** This site has flatter slopes. There are few, if any, rills (only in lowest area where flooding occurs) and there is no active headcutting and sides are covered with vegetation.

2. **Presence of water flow patterns:** There is little evidence of soil deposition or erosion (only after a flood event). Water generally flows evenly over the entire landscape.

3. **Number and height of erosional pedestals or terracettes:** There should not be any evidence of erosional pedestals or terracettes on this site.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** There is 0-5% bare ground on this site. Bare areas are small and not connected.

5. **Number of gullies and erosion associated with gullies:** None. Drainages are represented as natural, stable, vegetated channels.

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

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7. **Amount of litter movement (describe size and distance expected to travel):** Uniform distribution of litter. Litter rarely moves >12 inches only during high intensity storms or flood events.

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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):** Average of scores 5 or higher. Stability scores based on a minimum of 6 samples tested.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Ap horizon: 0 to 7 inches; dark grayish brown silt loam, weak fine granular structure. A horizon: 7 to 21 inches; dark grayish brown silt loam, moderate fine and medium granular structure.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Infiltration is moderate and uniform. Runoff is very low. Reference plant community composition and distribution is intact. (Tallgrass dominated)

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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):** There is no compaction layer.

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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: Tallgrasses

    Sub-dominant: Midgrasses,Forbs, Cool-Season Perennial Grasses, Bottomland Hardwood Trees

    Other: Shrubs

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** There may be some plant mortality and decadence on the perennial grasses, especially in the absence of fire and herbivory, but usually <5% depending on recent precipitation patterns.

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14. **Average percent litter cover (%) and depth (in):** Litter should cover >95% of the area between plants with accumulations of 1-3 inches deep depending on time since fire.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Normal production is 4500 - 8500 pounds per 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:** Invasives might include: eastern redcedar, locust, salt cedar, sericea lespedeza

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17. **Perennial plant reproductive capability:** All plants capable of reproducing at least every year. Both seedheads and vegetative rhizomes/tillers should be evaluated.
