USDA Natural Resources
Conservation Service

# Ecological site R080AY080OK
# Shallow Clay Upland

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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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|---|---|
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| Date | 05/21/2004 |
| Approved by | Bryan Christensen |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

## Indicators

1. **Number and extent of rills:** Very few rills.

2. **Presence of water flow patterns:** Distinct, particularly on steeper slopes. Not usually more than 1 foot deep.

3. **Number and height of erosional pedestals or terracettes:** Some, around small rocks and around bunchgrasses, but rarely more than 1 inch depth.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Up to 35%.

5. **Number of gullies and erosion associated with gullies:** Shallow soil limits formation of anything but small gullies. Usually these are on steeper slopes, are rounded, less than 1 – 2 feet deep and 2 – 3 feet wide.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Litter can move 6 inches after a high intensity rainfall event.

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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):** Stability score 5 – 6.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Reddish brown 0 – 5 inches, strong sub-angular blocky structure, hard.

   Refer to specific description for component sampled.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Tall, mid-grass, and sod grass community randomly dispersed. Slopes and very slowly permeable soils result in high runoff.

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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):** No compaction layer but fine texture and hard structure can be mistaken for 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: MIdgrass Shortgrass

    Sub-dominant: Tallgrasses Perennial Forbs

    Other: Cool Season Grass/Grasslikes; Woodies

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Due to the droughty nature of this site, some mortality will occur, especially with three-awns, sideoats grama and little bluestem. Death loss could be around 5%, higher in extremely dry, hot years.

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14. **Average percent litter cover (%) and depth ( in):** Litter cover 30 - 50%. Less than .5 inches deep.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Reference production is 1,200 – 2,400 lb/acre, annually.

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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:** Main invasives are eastern redcedar unless the site is exposed to fire.

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17. **Perennial plant reproductive capability:** All plants capable of reproducing at least every 2 – 3 years.

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