USDA Natural Resources
Conservation Service

Ecological site R058AE014MT
Dense Clay (DC) RRU 58A-E 10-14" p.z.

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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	06/11/2014
Approved by	Jon Siddoway
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills should not be present.

2. **Presence of water flow patterns:** Water flow patterns are obvious and numerous and may reach up to 10 inches wide and 2 feet long.

3. **Number and height of erosional pedestals or terracettes:** Erosional pedestals up to ½ inch may be present. Terracettes should be minor.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is < 60%. Bare ground will occur in quit large areas.

5. **Number of gullies and erosion associated with gullies:** Active gullies should not be present. Existing gullies should be “healed” with a good vegetative cover.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Little to no plant litter movement. If litter movement occurs, it is only for a short distance.

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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):** Surface Soil Aggregate Stability under plant canopy should typically be 5 or greater. Surface Soil Aggregate Stability not under plant canopy should typically be 3 or slightly less.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Use soil survey series description.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Sparse plant canopy (20% maximum), very slow to slow infiltration rates, and the high amount of bare ground contribute to a naturally high runoff rate even in HCPC.

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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 should be evident. This site is often typified by a vesicular surface (less than 2 inches) over a very hard subsoil.

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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: Cool season, mid-stature, rhizomatous grasses

    Sub-dominant: Shrubs and half shrubs >> Cool season, Mid-stature, Bunch grasses = Cool season, short-stature, bunch grasses and sedges = Warm season, mid-stature, bunch grasses

    Other: Minor components: Cool season, short-stature, rhizomatous grasses and sedges = forbs = Warm season, mid-stature, rhizomatous grasses

    Additional: (Blue grama should be grouped with warm season, short-stature, rhizomatous grasses due to its growth form)

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Some plant mortality and decadence (5 to 10%) is expected on this site.

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14. **Average percent litter cover (%) and depth (in):** Litter cover is in contact with soil surface.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 800 to 900 #/acre (13 to 14 inch precip. Zone) 350 to 700 #/ac (10 to 12 inch precip. Zone).

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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: Halogeton,knapweeds,whitetop,perennial pepperweed.

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17. **Perennial plant reproductive capability:** All species are capable of reproducing.
