

Ecological site R064XY045NE Dense Clay

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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	Stan Boltz
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None. Soil cracking is natural and not caused by erosion.

2. **Presence of water flow patterns:** None, or barely visible and discontinuous.

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):** 5 to 30 percent is typical; the higher bare ground levels would appear during extended dry periods.

5. **Number of gullies and erosion associated with gullies:** None should be present.

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

7. **Amount of litter movement (describe size and distance expected to travel):** Litter should fall in place. Slight amount of movement of smallest size class litter is possible, but not normal.

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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 aggregate stability ratings should typically be 3 or greater. Surface organic matter usually adheres to the soil surface. Soil surface fragments will typically retain structure at least for short periods when dipped in distilled water. Some fragments will dissolve in less than 1 minute.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A-horizon should be 3 to 6 inches thick but with light to dark gray colors when moist. Structure typically is platy parting to subangular blocky or occasionally fine granular in the upper 1/2 inch.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Combination of shallow and deep rooted species (mid rhizomatous grasses, tufted perennial cool-season grasses, and short warm-season grasses) with fine and coarse roots positively influences infiltration. Infiltration is not often affected by a change in plant composition as the rhizomatous cool-season species typically dominate.
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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):** A-horizon naturally has some platy structure. Compaction layers, if formed by management, do not typically persist. Compaction will be difficult to determine. Evidence of compaction can sometimes be confirmed by signs of recent concentration of livestock.
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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: Rhizomatous wheatgrasses >>
- Sub-dominant: Tall cool-season bunchgrasses >>
- Other: Short warm-season grasses = forbs > shrubs
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very little evidence of decadence or mortality. Bunch grasses have strong, healthy centers and shrubs are vigorous.
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14. **Average percent litter cover (%) and depth (in):** Litter cover typically 20 to 60 percent, with the depth roughly 0.25 inches.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Total annual production ranges from 900 to 2,000 pounds/acre, with the reference value being 1,500 pounds/acre (air-dry basis).
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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: State and local noxious weeds.
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17. **Perennial plant reproductive capability:** All species exhibit high vigor relative to climatic conditions. Do not rate based solely on seed production. Perennial grasses should have vigorous rhizomes or tillers.
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