

Ecological site R069XY042CO Clayey Plains

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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	Kirt Walstad
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:** Typically none, if present (steeper slopes following intense storms) short and not connected.

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):** 5-7% or less bare ground, with bare patches generally less than 2-3 inches in diameter. Extended drought can cause bare ground to increase upwards to 15-25% with bare patches reaching upwards to 12-18 inches in diameter.

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

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 short.
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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 class rating anticipated to be 5-6 in interspace at soil surface. These values need verification at reference site.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Average SOM is 1-3%. Soils are typically deep to moderately deep, light brownish-gray to light olive-brown, weak very thin platy to weak fine granular structure, approximately 0-4 inches in depth.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Diverse grass, forb, shrub functional/structural groups and diverse root structure reduces raindrop impact slows overland flow providing increased time for infiltration to occur. Extended drought reduces short/mid bunchgrasses causing decreased infiltration and increased runoff following intense storms.
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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: cool season mid rhizomatous > warm season short bunchgrass >
- Sub-dominant: shrubs = warm season mid rhizomatous > cool season mid bunchgrass >
- Other: warm season forbs > leguminous forbs > cool season forbs = warm season mid bunchgrass > warm season short stoloniferous > grasslike > annual native grasses
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Typically minimal. Expect short/mid bunchgrass mortality/decadence during and following drought.
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14. **Average percent litter cover (%) and depth (in):** Litter cover during and following extended drought ranges from 10-20%.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 300 lbs./ac. low precipitation years; 750 lbs./ac. average precipitation years; 1100 lbs./ac. above average precipitation years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 100 – 250 lbs./ac.
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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: Invasive plants should not occur in reference plant community. Cheatgrass, Russian thistle, kochia, other non-native annuals may invade following extended drought or fire if a seed source is available. Oneseed juniper may infrequently invade from adjacent sites with lack of fire.
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17. **Perennial plant reproductive capability:** The only limitations are weather related, wildfire, and natural disease that may temporarily reduce reproductive capability.
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