

## Ecological site EX044B01A001 Clayey (Cy) LRU 01 Subset A

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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:** Rills are not present in the reference condition.  

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- 2. Presence of water flow patterns:** Water flow patterns are not present in the reference condition.  

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- 3. Number and height of erosional pedestals or terracettes:** Pedestals are not evident in the reference condition.  

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- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is minimal (0 to 10 percent). It consists of small, randomly scattered patches.  

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- 5. Number of gullies and erosion associated with gullies:** No gullies are present in the Reference State.  

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- 6. Extent of wind scoured, blowouts and/or depositional areas:** No wind scoured, blowouts, or depositional areas are present in the Reference State.  

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- 7. Amount of litter movement (describe size and distance expected to travel):** No litter movement is expected.

Herbaceous litter falls within the rain shadow of the plant and does not move.

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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):** The soil surface is stable. Under canopy soil stability rating will be 5-6 and non-canopy sites will receive soil stability ratings of 3-6.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil Structure at the surface is typically weak to medium fine granular. A Horizon should be 4-6 inches thick with color, when wet, typically ranging in Value of 3 or less and Chroma of 3 or less. Local geology may affect color in which it is important to reference the Official Series Description (OSD) for characteristic range.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Evenly distributed across the site, bunchgrasses improve infiltration while rhizomatous grass protects the surface from runoff forces. Infiltration of the Clayey ecological site is well drained but has a slow infiltration rate. An even distribution of mid stature grasses comprising about 60 percent of site production, cool season rhizomatous grasses 25 percent of site production along with a mix of shortgrass, forbs and shrubs (5-25 percent).
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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):** Not present, some soils profiles may contain an abrupt transition to an Argillic horizon which can be misinterpreted as compaction however the soil structure will typically be fine to medium subangular blocky whereas a compaction layer will tend to be platy or structureless (massive).
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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: Mid-statured, cool season, perennial bunchgrasses primarily bluebunch wheatgrass and green needlegrass

Sub-dominant: shrubs  $\geq$  rhizomatous grass = short grass/grasslikes = forbs > subshrubs

Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality in herbaceous species is not evident. Species with bunch growth forms may have some natural mortality in centers is 3 percent or less. Shrubs, subshrubs mortality does not exceed 5 percent for any given species.
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14. **Average percent litter cover (%) and depth ( in):** Total litter cover ranges from 40 to 60 percent. Most litter is irregularly distributed on the soil surface and is not readily at a measurable depth.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-**

**production):** Production is variable from 950lbs/acre to 1700lbs/acre. Representative value of approximately 1250lbs/acre.

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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: Non-native invasive species on this ecological site include (but not limited to): dandelion (*Taraxicum* spp.), cheatgrass (*Bromus tectorum*), field brome (*Bromus arvensis*), spotted knapweed (*Centaurea Stoebe*), butter and eggs (*Linaria vulgaris*), leafy spurge (*Euphorbia esula*), and ventenata (*Ventenata dubia*)

Native species with the ability to indicate degradation however species presence alone does not imply degradation: Sandberg bluegrass (*Poa secunda*), big sagebrush (*Artemisia tridentata*), blue grama (*Bouteloua gracilis*), broom snakeweed (*Gutierrezia sarothrae*), rubber rabbitbrush (*Ericameria nauseosa*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), Rocky Mountain juniper (*Juniperus scopulorum*), ponderosa pine (*Pinus ponderosa*) when their populations are significant enough to affect ecological function, indicate site condition departure.

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17. **Perennial plant reproductive capability:** Capability is very high. Density of plants indicates that plants reproduce at level sufficient to fill available resource. Plants are producing seed and/or reproductive tillers in order to balance natural mortality with species recruitment.
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