

## Ecological site EX043B23A106 Clayey Overflow (CyO) Absaroka Lower Foothills

Last updated: 10/04/2019

Accessed: 05/05/2024

### 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	05/01/2008
Approved by	E. Bainter
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

1. **Number and extent of rills:** Rare to nonexistent.

2. **Presence of water flow patterns:** Water flow patterns sometimes evident in ephemeral floodplain zone where this site occurs.

3. **Number and height of erosional pedestals or terracettes:** Rare to nonexistent.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground can range from 5-20%.

5. **Number of gullies and erosion associated with gullies:** Active gullies should not be present.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Minimal to nonexistent.

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter expected to move in

water flow patterns.

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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 Stability Index ratings range from 2 (interspaces) to 6 (under plant canopy), but average values should be 2.5 or greater.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil data is limited for this site. Described A-horizons vary from 1 to 2 inches (3-5 cm). Organic matter is typically 1 to 2%.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant community consists of 60-75% grasses, 20% forbs, and 5-20% shrubs. Moderate plant canopy (50-70%) and litter plus slow to moderately slow infiltration rates result in slight to moderate runoff. Basal cover is typically around 2-3% for this site and does not effectively reduce runoff on this site.

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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 exists.

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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 rhizomatous grasses  
  
Sub-dominant: mid-size, cool season bunchgrasses = tall, cool season bunchgrasses  
  
Other: perennial shrubs = perennial forbs short, cool season bunchgrasses  
  
Additional:  

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Minimal decadence, typically associated with shrub component.

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14. **Average percent litter cover (%) and depth ( in):** Litter ranges from 20-40% of total canopy measurement with total litter (including beneath the plant canopy) from 75-90% expected. Herbaceous litter depth typically ranges from 10-25 mm. Woody litter can be up to several inches (>8 cm).

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** English: 1200-2400 lb/ac (1800 lb/ac average); Metric: 1344-2688 kg/ha (2016 kg/ha average).

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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: Bare ground greater than 40% or noxious weed invasion are the most common indicators of a threshold being crossed. Rhizomatous wheatgrasses, Blue grama, Sandberg bluegrass, and Basin big sagebrush are common increasers. Annual weeds such as pepperweed and blue mustard are common invasive species on disturbed sites.

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17. **Perennial plant reproductive capability:** All species are capable of reproducing, except in drought years.
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