

Ecological site DX032X01A143 Saline Upland Clayey (SUC) Big Horn Basin Core

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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	
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:** Barely observable.

- 3. Number and height of erosional pedestals or terracettes:** Not evident on slopes less than 9%, but erosional pedestals will be present with terracettes at debris dams on slopes greater than 9%.

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** *Bare Ground* is between 45 and 70%, occurring in small openings throughout the site.

- 5. Number of gullies and erosion associated with gullies:** Active gullies restricted to concentrated water flow patterns.

- 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. Plant

litter remains in place and is not moved by erosional forces. As site increases in slope greater than 9% will see movement increase with slope.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Plant cover and litter average 30% or greater of the soil surface and maintains soil surface integrity. The soil stability class is found to average 3.2 ranging from 1 to 6.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The soil surface structure is moderate granular (moderate fine subangular or angular blocky parting to granular) with a surface depth of 2 to 7 inches (5- 15 cm). The dry surface Colors are generally in the 10YR to 7.5YR range with a Hue of 6 and a Chroma of 3. Organic matter in the surface ranges from 0.5 to 1.0.
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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, the finer soil textures, and the high amount of bare ground contribute to slow to moderate infiltration rates. The amount of bare ground and slow infiltration rates result in a naturally higher runoff rate even in reference state.
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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 or soil surface crusting should be present.
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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: Shrubs > Mid-stature Grasses
- Sub-dominant: Mid-stature Grasses > Forbs
- Other: Forbs = Short-stature Grasses
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Very Low, but some plant mortality and decadence is expected.
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14. **Average percent litter cover (%) and depth (in):** Litter cover ranges from 5 to 20% with an average of 10% litter cover between plants; reaching a high of 30 under plants. Herbaceous litter depth typically ranges from 3-10 mm, and woody litter ranges from 2-6 mm.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Average Annual Production is 200 lbs. (91 kg) ranging from 75 to 350 lbs. (34-159 kg) production.

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: Birdfoot Sagebrush, Greasewood, Annual False Wheatgrass, False Buffalowgrass, Sandberg bluegrass, Woody aster, and a variety of native annual forbs will invade the site as it degrades. Invasive species that are common include but are not limited to: Halogeton, Cheatgrass, Knapweeds and Thistles. For a current and more complete list consult the County and State Weed and Pest Noxious Weed List.

17. **Perennial plant reproductive capability:** May be limited due to effective moisture and seed/soil contact.
