USDA Natural Resources Conservation Service

Ecological site EX044B01A093
Saline Upland (SU) LRU 01 Subset A

Last updated: 9/11/2023
Accessed: 05/19/2024

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	04/23/2019
Approved by	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills should not be evident in the reference state.

2. **Presence of water flow patterns:** Water flow patterns are not present in the reference condition on gentle slopes. If present, they are most likely to occur on steep slopes and are inconspicuous, disconnected, and very short in length.

3. **Number and height of erosional pedestals or terracettes:** Wind and water erosion should not be evident in the reference state.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is less than 20 percent in the reference state.

5. **Number of gullies and erosion associated with gullies:** Not evident in Reference State.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Not evident

7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement is minimal and should not be more than a few inches (less than 12) from where it originated. If movement is noticed, it will be smaller leaves and stems from smaller grasses and forbs.

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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):** Site Stability ratings often 3-4 in interspaces and 4-6 under plant canopy.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very weak platy to moderately fine granular structure. Structure will be friable indicated lower soil organic matter. Typical A horzion is less than 4 inches thick with colors from Munsell Color Book with Value 7 or less and Chroma 2 or less. Local geology may affect color in which 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:** The Saline upland ecological site is well drained but has a slow to moderate infiltration rates. An even distribution of mid stature grasses (60-70% of site production), cool season rhizomatous grasses along with a mix of shortgrass, forbs and shrubs optimizes infiltration rates for 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):** Not Present in Reference State

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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 bunchgrasses

    Sub-dominant: salt tolerant shrubs ≥ cool season bunchgrass ≥ Rhizomatous grasses ≥ forbs = subshrubs

    Other: native annual forbs may be present

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality of native perennial grasses and shrubs is low. Some seasonal decadence of shrubs may be noticed after extended drought however this will be limited.

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14. **Average percent litter cover (%) and depth (in):** This site has limited litter cover typically around 20% though it may vary slightly based on current growing conditions and natural site variability. Litter is fairly fine herbaceous with minimal woody litter and often in a depth too thin to measure.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Production of this site is relatively low due to chemical limitations of the site. Average annual production is 600. Low: 450 High 700. Production varies based on effective precipitation and natural variability of soil properties for

this ecological site.

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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 species that may occur (but not limited to) include: Leafy spurge, Spotted knapweed, Cheatgrass, Field brome (aka Japanese brome), Ventenata, and Crested wheatgrass

    Native species that may indicate degraded states (presence alone does not necessarily indicate a degraded): Blue grama, Rocky Mountain Juniper, Sandberg bluegrass, pricklypear, Greasewood

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17. **Perennial plant reproductive capability:** In the reference condition, all plants are vigorous enough for reproduction either by seed or rhizomes in order to balance natural mortality with species recruitment.
