USDA Natural Resources
Conservation Service

Ecological site R058AC194MT
Shallow to Gravel (SwGr) RRU 58A-C 11-14" p.z.

Last updated: 6/14/2023
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	04/23/2005
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 on slopes <10%. Slopes between 10-35% may have rills present, but they will be < 5.0 feet long. Slopes above 35% will have occasional rills < 8.0 feet long.

2. **Presence of water flow patterns:** Water flow patterns are generally not evident on slopes <10%, but can be apparent on steeper slopes in the reference state. When they are present, they are short (< 2 feet long) and discontinuous.

3. **Number and height of erosional pedestals or terracettes:** Both may be evident in the reference state, especially on steeper slopes (>35%). If present, they do not exceed 1.5 inches in height.

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 30% in the reference state. In HCPC, bare ground should not exceed 18%.

5. **Number of gullies and erosion associated with gullies:** Gully erosion is not evident in the reference state.

6. **Extent of wind scoured, blowouts and/or depositional areas:** These are not evident in the reference state.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement varies by size and depth of litter. In the reference state, litter should be coarse perennial grass leaves, anywhere from 1.5 inches up to 3 inches in length, plus small shrub leaves. Litter will not move more than a couple of inches from where it originated.

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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 values of 4-5 in plant interspaces. Stability values of 5-6 under plant canopies and at plant bases.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderate or strong granular surface structure. A-Horizon is 1 to 8 inches thick. Organic matter approximately 2-3%.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Deep-rooted native perennial bunchgrasses optimize infiltration and runoff. They should be spaced approximately 1.5 to 2.5 feet apart.

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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 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: Mid-height, native perennial bunchgrasses and grasslikes >> native perennial and annual forbs > shrubs.

    Sub-dominant:

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant mortality of deep-rooted perennial bunchgrases is very low; mortality of shrubs is very low. Decadence during periods of prolonged drought will be evident on all plant species.

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 900 – 1200 #/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: plains pricklypear, broom snakeweed, cheatgrass, Japanese brome, curlycup gumweed, Wyoming big sagebrush, fringed sagewort, blue grama.

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17. **Perennial plant reproductive capability:** All plants are capable of reproducing sexually and/or vegetatively.
