USDA Natural Resources
Conservation Service

Ecological site R028BY009NV
SHALLOW SILTY 8-10 P.Z.

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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:** This site is essentially level and rills are non-existent.

2. **Presence of water flow patterns:** This site is subject to ponding and flooding after summer convection storms. As a result water flow patterns are rare to common dependent on site location relative to major inflow areas. Water flow patterns are typically short, ending in depressional areas where water ponds.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are none to rare mainly occuring in water flow paths.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground 70-80%

5. **Number of gullies and erosion associated with gullies:** A few gullies may be evident where this site occurs adjacent to major in-flow areas or ephemeral channels.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Typically minimal – some wind scouring may occur from a severe wind event preceding a summer convection storm

7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter (foliage of grasses and annual & perennial forbs) expected to move distance of slope length during periods of intense summer convection storms or run in of early spring snow melt flows. Persistent litter (large woody material) will remain in place except during unusual flooding or ponding events.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil stability values will range from 4 to 6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Structure of soil surface will be prismatic or thick platy. Soil surface colors are pale browns and soils are typified by an ochric epipedon. Surface textures are fine sandy loams or silt loams. A vesicular crust is common. Organic matter is typically less than 1 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This site is may be ponded for short periods in the late winter. Runoff is not significant. Deep-rooted bunchgrasses (i.e., Indian ricegrass) aid in infiltration.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compacted layers are none. Subangular blocky or prismatic structure in the subsoil is normal for these soils and is not to be interpreted as compaction.

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: Reference State: deep-rooted, cool season, perennial bunchgrasses (Indian ricegrass) > salt-desert shrubs (shadscale) >>

    Sub-dominant: > shallow-rooted perennial bunch grasses > associated shrubs > deep-rooted, cool season, perennial forbs >> fibrous, shallow-rooted, cool season, perennial and annual forbs

    Other: microbiotic crusts

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Dead branches within individual shrubs common and standing dead shrub canopy material may be as much as 35% of total woody canopy.

14. **Average percent litter cover (%) and depth (in):** Between plant interspaces (10-20%) and depth (± ¼ in.)

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** For normal or average growing season (March thru May) ± 400 lbs/ac; Favorable years ± 500 lbs/ac and unfavorable years ±300 lbs/ac

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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:** Potential invaders include: annual mustards, annual kochia, Russian thistle and halogeton.

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17. **Perennial plant reproductive capability:** All functional groups should reproduce in average (or normal) and above average growing season years. Reduced growth and reproduction occur during extreme or extended drought periods.
