USDA Natural Resources
Conservation Service

Ecological site R028AY106NV
SALINE BOTTOM

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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.

Author(s)/participant(s)	GK BRACKLEY/P NOVAK-ECHENIQUE
Contact for lead author	State Rangeland Management Specialist
Date	06/22/2006
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** This site is nearly level, thus rills are not expected.

2. **Presence of water flow patterns:** Water flow patterns are rare to common depending on proximity of site to a well-defined in-flow channel. Moderately fine to fine surface textures result in limited infiltration rates and ponding is of run-in water is common for short period in the late winter or early spring. Concentrations of surface salts and sodium result in chemical crusts which also impedes precipitation infiltration. Water flow patterns are typically short, ending in depressional areas.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are none to rare and are confined to 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 30-45%

5. **Number of gullies and erosion associated with gullies:** None

6. **Extent of wind scoured, blowouts and/or depositional areas:** None

7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter (foliage of grasses and annual & perennial forbs) is only expected to move during periods of flooding by adjacent streams. Persistent litter (large woody material) will remain in place except during major 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 3 to 6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Structure of soil surface is typically subangular blocky parting to fine granular. Soil surface colors are grayish-browns and the soils are typified by an ochric epipedon. Soil surface textures are clay loams and silty clays. Organic carbon can range from 1.5 to over 3 percent and will vary with micro-topography.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Deep-rooted perennial grasses (basin wildrye and alkali sacaton] slow runoff and increase infiltration. Tall stature and relatively coarse foliage of basin wildrye and associated litter break raindrop impact and provide opportunity for snow catch and moisture accumulation on site.

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. Massive subsoil structure or calcic horizons are normal for this site and are 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: Tall-statured, deep-rooted, cool season, perennial bunchgrasses (basin wildrye) > warm season perennial bunchgrasses >

    Sub-dominant: Short-statured rhizomatous grasses > tall shrubs >associated perennial grasses and grass-like plants = deep-rooted, cool season, perennial forbs = fibrous, shallow-rooted, cool season, perennial and annual forbs. (By above ground production)

    Other: evergreen trees, 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 are common and standing dead shrub canopy material may be as much as 25% of total woody canopy

14. **Average percent litter cover (%) and depth (in):** Within plant interspaces (30-40%) and depth of litter ± ½ inch.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** For normal or average growing season (through end of June) ± 1500 lbs/ac; Winter moisture significantly affects total production. Favorable years ±2200 lbs/ac and unfavorable years ±800 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, cheatgrass, thistles, camel thorn, annual kochia, tall whitetop, and salt cedar. Rocky Mountain juniper may also increase on this site.

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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.
