USDA Natural Resources
Conservation Service

Ecological site R025XY003NV
LOAMY BOTTOM 8-14 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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Date	06/22/2006
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None

2. **Presence of water flow patterns:** Flow paths may occur after spring flooding events. Flow paths would be short (<3m), meandering and not connected.

3. **Number and height of erosional pedestals or terracettes:** A few plants may be pedestals that occur in flow paths.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground ± 20%; surface rock fragments less than 5%; shrub canopy less than 10%; foliar cover of perennial herbaceous plants >60%.

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) only expected to move during periods of flooding by adjacent streams. Persistent litter (large woody material) will remain in place except during large flooding events.

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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):** Soil stability values will range from 4 to 6.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is platy, subangular blocky or granular. Soil surface colors are very dark and the soils have thick mollic epipedons. Organic matter can range from 2 to 3 percent for much of the upper 20 inches.

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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, perennial, bunchgrasses 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 snow accumulation on 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):** None - Platy subsurface layers are not to be interpreted as compaction.

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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: Reference State: Tall-statured, deep-rooted, cool season, perennial bunchgrasses >> relatively short-statured, deep-rooted, cool season, perennial bunchgrasses >>

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

    Other: evergreen and deciduous shrubs

    Additional: With an extended fire return interval, shrub functional/structural groups will increase and a corresponding reduction in herbaceous structural/functional groups.

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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; standing dead shrub canopy material may be as much as 25% of total woody canopy.

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14. **Average percent litter cover (%) and depth (in):** Between plant interspaces (± 80%) and litter depth is ± 1 inch.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** For normal or average growing season (through June) ± 3500 lbs/ac; Winter moisture significantly affects

total production. Favorable years ± 4500 lbs/ac and unfavorable years ± 2000 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, povertyweed, thistles, saltcedar, annual kochia, pigweed, and tall whitetop.

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17. **Perennial plant reproductive capability:** All functional groups should reproduce in most years. Reduced growth and reproduction occur during extreme or extended drought periods.
