USDA Natural Resources
Conservation Service

Ecological site R030XC013NV
LOAMY BOTTOM 11-13 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	Sarah Quistberg
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to rare. A few may occur after summer convection storms or rapid snowmelt.

2. **Presence of water flow patterns:** None to few. A few may occur after summer convection storms or rapid snowmelt flow patterns are short (<1 m) and stable.

3. **Number and height of erosional pedestals or terracettes:** None to rare. Occurrence is usually limited to areas of water flow patterns.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground ± 20-30%; surface rock fragments 30-40%.

5. **Number of gullies and erosion associated with gullies:** Gullies are rare to common depending on severity of associated stream channel entrenchment. Gullies and head cuts are healing or stable.

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.

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

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is typically very thick platy. Soil surface colors are dark browns and the soils have thick mollic epipedons. Organic matter can range from 3 to 5 percent for much of the upper 20 inches. (OM values derived from lab characterization data.)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Deep-rooted perennial grasses slow runoff and increase infiltration. Tall stature and relatively coarse foliage of wildrye and associated litter break raindrop impact and provide opportunity for snow catch and snow 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):** None - Platy or subangular blocky structure 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: Tall-statured, deep-rooted, cool season, perennial bunchgrasses, basin wildrye

    Sub-dominant: tall shrubs >warm season rhizomatous grasses > deep-rooted, cool season, perennial forbs >warm season rhiz fibrous, shallow-rooted, cool season, annual and perennial forbs

    Other:

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

14. **Average percent litter cover (%) and depth (in):** Between plant interspaces (± 40-50%) and litter depth is > 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 June) ± 1500 lbs/ac; Favorable years: 2500 lbs/ac; Unfavorable years: 1000 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, single-leaf pinyon and Utah juniper.

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17. **Perennial plant reproductive capability:** All functional groups should reproduce in most years.
