

Ecological site R106XY075NE Loamy Upland

Accessed: 04/10/2024

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	01/28/2014
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Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None
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2. **Presence of water flow patterns:** Little to no soil deposition or erosion; however, short, unconnected patterns may appear as slope approaches the upper limit for the site.
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3. **Number and height of erosional pedestals or terracettes:** None; however, minor erosional features may appear as slope approaches the upper limit for the site.
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** >95% of the ground is covered by plant canopy, litter, and/or coarse fragments. Following fire, much less litter/canopy the subsequent growing season is to be expected.
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5. **Number of gullies and erosion associated with gullies:** None; or if present, headcut and sides are vegetated and stable.
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None

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7. **Amount of litter movement (describe size and distance expected to travel):** Plant litter is distributed evenly throughout the site; however, heavy rainfall may move herbaceous and small woody litter short distances as slope approaches the upper limit for the site.
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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):** Interspatial stability class rating 6
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A mollic epipedon is present. Refer to the Official Series Description for the range of characteristics of site-specific soils.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** No negative effect due to plant composition or distribution. Plant canopy intercepts the majority of raindrops. Robust root structure, litter production, and decomposition process maximize infiltration and minimize overland flow.
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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; Bt horizons will have finer textures and higher bulk density, but not a platy structure.
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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: Tall warm-season bunchgrass - Big bluestem, indiagrass, switchgrass
- Sub-dominant: Mid warm-season bunchgrass - Sideoats grama, little bluestem, composite dropseed
- Other: Minor (grasses) - Canada or Virginia wildrye, Scribner panicum, sedges
- Minor (forbs) - black sampson, compassplant, fleabane, dotted gayfeather, heath aster, slimflower scurfpea, spiderwort, western ragweed
- Minor (shrubs) - leadplant, Arkansas rose, coralberry
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** The vast majority of plants are healthy and vigorous. There is no significant restriction to plant regeneration due to litter depth or standing dead biomass.
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14. **Average percent litter cover (%) and depth (in):** When prescribed burning is practiced, there may be very little litter the first half of the subsequent growing season.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Production ranges from 2,975 – 5,440 lbs/ac (air-dry weight) depending on climatic conditions. The reference representative value production is 4,250 lbs/ac (air-dry weight).
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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:** Annual sunflower, fall witchgrass, kochia, little barley, silver bluestem, tansy mustard, Japanese brome, wild lettuce, common mullein, woolly verbena, windmill grass, smooth brome, tall fescue, eastern redcedar, bur oak, Osage orange, roughleaf dogwood, and honey locust.
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17. **Perennial plant reproductive capability:** Desirable perennial plants are healthy. The vast majority of perennial plants have healthy root systems that produces many rhizomes. Vegetative and reproductive structures are not stunted.
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