

Ecological site R038XB230AZ Limy Hills 16-20" 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	Scott Woodall
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** No rills present on the site. Black grama and sideoats grama plants have densities of 5-10 plants per square yard, higher densities for younger plants.

- Presence of water flow patterns:** Water flow paths are difficult to observe and highly sinuous. Water flows less than 1 foot before being intercepted by an adjacent plant with high litter cover between plants.

- Number and height of erosional pedestals or terracettes:** No pedestals or terracettes present on the site. High density of black or sideoats grama provides very high protection of site and not conducive to terracette formation despite black grama's clonal nature that would normally contribute to terracette formation on sites with lower perennial grass densities.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 15-30%

- Number of gullies and erosion associated with gullies:** None present on the site. When the site is neat deep canyon systems gullies are to be expected however these are generally of geologic age and not highly active with sloping versus vertical sides of the gullies.

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None present on the site.
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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter generally travels less than 1-1.5 foot before encountering adjacent plant bases. Woody litter stays in place.
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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):** Expect soil stability values of 4-6 across most of the site.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface is approximately 2" thick, fine to medium granular, and color is 7.5YR 4/2 dry and 7.5YR 3/2 moist.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Very high densities of perennial grasses are well distributed on the site and contribute to high infiltration. Densities of perennial grass plants range from 4-7 per square yard; higher densities for smaller/younger plants.
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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 present on the site. High amounts of gravel or cobble make use of penetrometer impractical. Soils typically do not have an argillic horizon that could be mistaken for a compaction layer.
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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: Perennial grass
- Sub-dominant: trees > shrubs = succulents
- Other: perennial forbs = annual forb = annual grass in normal year, In El Nino Years annual forbs and grasses > trees
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 10-15% canopy mortality of trees and shrubs, < 5% mortality of dominant perennial grasses
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14. **Average percent litter cover (%) and depth (in):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 530 lbs/ac in below average rainfall year, 865 lbs/ac in normal year, 1190 lbs/ac in above average year.
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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: Non-native annual grasses like red brome and cheatgrass can invade and dominate areas of the site with very low perennial grass cover. Juniper is the most common woody species to increase however prickly pear can also increase on the site

17. **Perennial plant reproductive capability:** Not affected despite several drought years in the region.
