

## Ecological site R038XC316AZ Clayey Slopes 20-24"

Last updated: 5/07/2020  
Accessed: 04/26/2024

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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	05/30/2011
Approved by	Scott Woodall
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- 1. Number and extent of rills:** Site is not conducive to rill formation. High cover of grass, trees, and shrubs with woody species being scattered and herbaceous species are abundant to the perimeter of woody species. Grass plants are less than 1 foot apart in the interspaces of woody species and provide a highly sinuous flow path for overland flow.

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- 2. Presence of water flow patterns:** Water flow paths are very hard to observe on the site due to high herbaceous litter and density of herbaceous species. Perennial grass plants are less than 1 foot apart in the interspaces of woody species and provide a highly sinuous flow path for overland flow.

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- 3. Number and height of erosional pedestals or terracettes:** None present on the site. Herbaceous production is dominated by very dense bunchgrasses that are not conducive to pedestalling or terracette formation. There are approximately 10-15 perennial bunch grass plants per square yard in the interspaces between woody species.

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- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 1-5%.

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- 5. Number of gullies and erosion associated with gullies:** Geologic erosional gullies are present on the site but have healed and have sloping banks that are well vegetated.

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6. **Extent of wind scoured, blowouts and/or depositional areas:** None present on the site. Plant community is shrub and tree dotted savanna with very dense perennial bunch grass plants and 10-20% gravel cover in the interspaces that is not conducive to wind erosion.
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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter is transported less than 2 feet before being intercepted by high density perennial bunch grass plants. Woody litter stays in place near parent plants.
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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):** Stability values range from 5-6 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):** Weak to moderate fine to medium granular structure 2 to 3 inches thick. Color is 7.5YR 5/2 dry and 7.5YR 3/2 moist. Organic matter is 1-3%.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Perennial bunch grass plants are the most extensive in terms of canopy cover on the site and at 10-15 plants per square yard in interspaces of trees are highly effective at promoting infiltration and reducing the energy of water that leaves the 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 present on the site. Argillic horizon at 2-3 inches deep may be mistaken for a compaction layer. High gravel and cobble in subsurface are usually easily detected.
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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 bunch grass > trees > short grasses
- Sub-dominant: evergreen shrubs > succulents = miscellaneous grass = cool season grass = annual grass = annual forbs > perennial forbs
- Other:
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 5-10% canopy mortality of trees and shrubs.
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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):** 1340 lbs/ac in below average year, 2000 lbs/ac in average year, 2670 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:** Alligator juniper is the most common species on cooler aspects, one seed or redberry juniper on warmer aspects. Manzanita and oaks are second most common species. Annual goldeneye can become problematic where trees and shrubs have not increased and continuous herbivory from livestock or wildlife have reduced vigor of short grasses.

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

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