

## **Ecological site R035XC317AZ Sandy Loam Upland 10-14" 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	11/01/2007
Approved by	S. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### **Indicators**

1. **Number and extent of rills:** None. Due to the low to medium runoff, well to somewhat excessively drained and moderate to rapid permeability, rills would not be expected on this site.
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2. **Presence of water flow patterns:** None. Due to the low to medium runoff, well to somewhat excessively drained and moderate to rapid permeability, water patterns would not be expected on this site.
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3. **Number and height of erosional pedestals or terracettes:** There may be a few occasional pedestals and terracettes, especially during a drought, due to the high wind erosion hazards of the soils.
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 10-20%. This site has the potential to produce a moderate amount of plant cover and litter due to an average availability of water capacity of 7-10 inches. Drought may cause an increase in bare ground.
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5. **Number of gullies and erosion associated with gullies:** None. Any gullies present are revegetating and not actively eroding.
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6. **Extent of wind scoured, blowouts and/or depositional areas:** Some wind scoured areas, blowouts and/or depositional areas may occur, especially during droughts due to high wind erosion hazard of the soils.
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7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous and fine woody litter will be transported by wind and in water flow pathways. Coarse woody litter will remain under shrub and tree canopies.
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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 surface textures include loamy sand, fine sandy loam, and very fine sandy loam. A few soils have gravelly surfaces, but most soils do not have any rock fragments. When well vegetated, these soils have a moderate to high resistance to water erosion, but only a low resistance to wind erosion.
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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 weak to moderate thin platy. The thickness of the A-horizon is 2-10 inches. The color of the A-horizon did not contrast with the subsurface soil horizons for very deep soils, but showed a darker color on moderately deep soils with gentle slopes (2-9% slope).
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This site is characterized by a relatively even distribution of grasses and trees, with lesser amounts of shrubs and forbs. Trees are often scattered sparsely across the site. Canopy cover ranges from 5-15% (grasses > shrubs > forbs). Basal cover ranges from 0-2% (grasses > forbs > shrubs > trees) for vascular plants and 30-50% for biological crust (cyanobacteria > lichen > moss). Both canopy and basal cover values decrease during a prolonged drought. This type of plant community is moderately effective at capturing and storing precipitation.
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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. These soils are not easily compacted. Many of the soils have a naturally granular 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: perennial colonizing grasses >

Sub-dominant: shrubs > perennial bunchgrasses > perennial forbs > annual grasses > annual forbs > succulents

Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** All plant functional groups are adapted to survival in all but the most severe droughts. Severe winter droughts affect shrubs and trees the most. Severe summer droughts affect grasses the most.
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14. **Average percent litter cover (%) and depth ( in):** Of the total litter amount, it would be expected that approximately 7-90% would be herbaceous litter and approximately 10-30% would be woody litter. Litter amounts increase during the first few years of drought and decrease in later years.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 350-500 lbs/ac dry years; 500-650 lbs/ac median years; 650-800 lbs/ac wet years
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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:** Broom snakeweed, Greene's rabbitbrush, prickly pear, silverleaf nightshade and false buffalograss are natives that have the potential to increase and dominate after fire or heavy grazing. Cheatgrass is an exotic annual that is becoming endemic to the site regardless of management or fire frequency. It may become dominant after a fire, even with conservative or no grazing. Russian thistle, filaree, silverleaf nightshade, puncturevine, cocklebur and kochia are native and exotic forbs that have the potential to invade the site after heavy grazing and/or disturbance, especially if the site is near farm fields or disturbed lands.
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17. **Perennial plant reproductive capability:** All plants native to the site are adapted to the climate and are capable of producing seeds, stolons, and/or rhizomes except during the most severe drought.
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