

## Ecological site R035XC334AZ Sandy Loam Upland 10-14" p.z. Calcareous

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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	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- 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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- Presence of water flow patterns:** None on level slopes 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. On steeper slopes, a few water flow patterns may be present, especially following large storm events or where adjacent to rock outcrops.

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- Number and height of erosional pedestals or terracettes:** There may be a few occasional pedestals and terracettes, especially on steeper slopes and/or during a drought, due to the high wind erosion hazards of the soils

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- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground (soil surface cover) ranges from 40-60%. This site has the potential to produce a moderate amount of plant cover and litter due to an average availability of water capacity of 6-10 inches. Drought may cause an increase in bare ground.

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- Number of gullies and erosion associated with gullies:** None. Any gullies present are stabilized with grasses and shrubs and should not be 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. There may be some slight deposition around long lived shrubs.
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7. **Amount of litter movement (describe size and distance expected to travel):** The majority of herbaceous and fine woody litter will be transported by wind and some by water in 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 ranging from loamy fine sand to loam. When well vegetated, these soils have a moderate to high resistance to water erosion, but only a moderate resistance to wind erosion. Expected stability ratings of 4-5 under canopies and 2-3 in the interspaces.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Most soils have a fine granular structure. The typical thickness of the A-horizon is 3-8 inches. Typical surface color is yellowish red (5YR 5/6).
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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 dominance of grasses with scattered shrubs, with lesser amounts of forbs and trees. Trees are often widely scattered sparsely across the site. Canopy cover ranges from 15-30% (grasses >> shrubs > forbs > trees and cacti). Basal cover ranges from 5-12% for vascular plants and 0-15% for biological crust. 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. Some soils may have a massive structure and should not be confused with a compacted 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: Cool season grasses (needle and thread, Indian ricegrass, squirreltail) > Warm season grasses (blue grama, black grama, galleta, sand dropseed) >
- Sub-dominant: Shrubs (Mormon tea, fourwing saltbush, rabbitbrush, snakeweed) > Forbs > Trees
- Other: Cacti & Yucca
- 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):** Litter depth ranges from 1 leaf thickness to 2 inches. Of the total litter amount, it would be expected that up to 90% would be herbaceous litter and 10-30 percent would be woody litter. There may be a slight increase of litter following a 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):** The expected total annual production is 550 – 650 lbs/ac in a normal precipitation 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:** Broom snakeweed, Greene's rabbitbrush, prickly pear, and juniper are all natives that have the potential to increase and co-dominate after disturbance. Cheatgrass and Russian thistle is an exotic annual that is becoming endemic to the site regardless of management or disturbance.
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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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