

Ecological site R035XC373AZ Sandy Upland 10-14" p.z. Warm

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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

- 1. Number and extent of rills:** None to very few expected. The sandy surface textures and excessively drained nature of the soils should preclude the presence of rills. An occasional rill may occur in areas near or adjacent to exposed bedrock where concentrated water flows and accumulates.
- 2. Presence of water flow patterns:** A few widely scattered water flow patterns may be present. Water flow patterns on these soils are commonly less than 6 feet long, but may be longer on steeper slopes, generally occupying < 10% of the ground cover. Sites with well developed biological crust can provide additional flow pathways for water, especially following intense storm events.
- 3. Number and height of erosional pedestals or terracettes:** None to few. Short pedestals(1/2") can form at the base of plants along rills or water flow patterns. Terracettes are mostly absent. Sites with well developed biological crust can be mistaken for pedestals. These are natural and not considered signs of site departure.
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 30-60%. Functioning biological crust should not be counted as bare ground. Drought conditions may cause a short-term increase in bare ground.
- 5. Number of gullies and erosion associated with gullies:** None expected. An occasional gully may occur on steeper slopes near or adjacent to exposed bedrock where concentrated water flows and accumulates. These gullies should

stabilized with perennial herbaceous cover.

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind scoured areas and blowouts should be stable. Some slight mounding around plant bases and small blowout areas may occur, especially during droughts, due to high wind erosion hazard of the soil. Mounding is mostly to occur around the base of long-lived perennial shrubs.
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7. **Amount of litter movement (describe size and distance expected to travel):** Most woody litter accumulates under plant canopies and bases. Some fine litter will move a short distances (<5') and accumulate in depressions and flow paths. Other fines will be removed from the site by wind.
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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):** Expected average values of 3-4 under plant canopies and 2-3 in the plant interspaces.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface depths generally range from 3-5" with a single grain, loose structure. Color is variable depending on parent material, but generally has hues of yellowish red (5YR) or light to strong brown (7.5YR)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** A mixed canopy of shrubs and bunchgrasses along with scattered clumps of biological crust promote the greatest infiltration and least amount of runoff. Plant composition consists of about 65 percent shrubs, 25 percent grasses and 10 percent forbs.
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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
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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: Evergreen shrubs (Blackbrush, Cutler's Mormon tea)
- Sub-dominant: Cool-season grasses > Warm-season grasses > forbs
- Other: trees and annual grasses
- 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 cool season grass the most. Severe summer droughts affect warm season grasses the most.
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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):** 300-400 lbs/ac in an 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: Cheatgrass, red brome, Russian thistle and other introduced annual are most likely to invade this site with or without disturbance. Blackbrush, broom snakeweed, rabbitbrush and juniper are native to this site, but all have the potential to increase and invade this site with disturbance.
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17. **Perennial plant reproductive capability:** All native perennial plants are adapted to the climate and are capable of producing seeds, stolons and rhizomes except during the most severe droughts.
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