

Ecological site R035XA118AZ Sandy 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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Approved by	Steve Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** None. The sandy surface textures and well drained nature of the soils should preclude the presence of rills.

- Presence of water flow patterns:** A very few scattered water flow patterns may be present on steepest slopes. Water Flow patterns on these soils are commonly 1 to 2 meters long, generally occupying < 5% of the ground cover.

- Number and height of erosional pedestals or terracettes:** Uncommon. If present pedestals typically less than 1" in height often associated with deposition areas and water flow patterns. Terracettes are absent. This site has potential for significant development of biological crust. Well developed biological crust should not be confused with pedestals.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground averages 35-55%. Drought may cause an increase in bare ground.

- Number of gullies and erosion associated with gullies:** None.

- Extent of wind scoured, blowouts and/or depositional areas:** Wind scoured areas, blowouts, and/or depositional

areas are mostly uncommon in well vegetated herbaceous plant communities(1.1 & 1.2). However, in certain plant communities (1.3 & 1.4) some deposition and wind scour may occur, especially during droughts, due to high wind erosion hazard of the soil. Sites dominated by sand sage and juniper are most likely to suffer from excessive blowouts and depositions

7. **Amount of litter movement (describe size and distance expected to travel):** Most herbaceous and fine woody litter will be transported by wind and in water flow pathways, while a small percentage stays in place. Coarse woody litter and duff will accumulate under shrub and tree canopies.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Expected soil aggregate stability ranges from 2 to 4. Under canopies the range is 3 to 4 and 2 to 3 in the interspaces. When well vegetated, these soils have a moderate to high resistance to water erosion, but only a low resistance to wind erosion.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is loose granular, with a weak physical crust. Surface thickness range from 3-6 inches. Color is variable depending on parent material.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** This grassland community consists of about 70 percent grasses, 25 percent shrubs and 5 percent composition of forbs and promotes infiltration and reduces runoff.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None.

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 (35-45%) > warm season grasses (30-40%)

Sub-dominant: shrubs (15-25%)

Other: Forbs (5-10%) > Trees (1-5%)

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** In a normal year up to 10% of grasses and shrubs die off. During and after drought years there can be from 10 to 20% die off of shrubs and grasses. Severe winter droughts affect shrubs, trees and cool season grasses the most. Severe summer droughts affect the warm season grasses the most.

14. **Average percent litter cover (%) and depth (in):** Within plant interspaces litter ranges from 10 to 20% cover, while

under shrub and tree canopies it ranges from 25 to 60% cover with depths from 1/8 to 1/4 inch thick.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 250-350 pounds per acre (dry weight) in drought years, 450-550 pounds per acre in normal years, 600-700 pounds per acre in 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:** Mormon tea, Broom snakeweed, sand sagebrush and rabbitbrush are all native to the site, but have the ability to increase and dominate the area after disturbance. Oneseed juniper (JUMO) is native to the site, but has the ability to increase and dominate the site after unmanaged grazing and/or fire exclusion. Introduced annuals that have the ability to increase and dominate the site after unmanaged grazing and/or ground disturbance include cheatgrass and Russian thistle
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17. **Perennial plant reproductive capability:** All plants native to this site are adapted to the climate and are capable of producing seeds, stolons and rhizomes except during the most severe droughts.
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