USDA Natural Resources
Conservation Service

Ecological site R035XB234AZ
Sandstone Upland 6-10" 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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Date	08/02/2012
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None expected. However, temporary rills may form after large, intense storm events; especially when the site is below or adjacent to rock outcrops.

2. **Presence of water flow patterns:** None expected due to the soils being well-drained and able to accept most, if not all the moisture that falls on them.

3. **Number and height of erosional pedestals or terracettes:** No significant development of

pedastals. These soils may show signs of mounding around large shrubs from wind deposition, not from water erosion.

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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 50 to 75 percent.

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

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6. **Extent of wind scoured, blowouts and/or depositional areas:** There should be no active wind scour or blowouts. There may be slight deposition at the base of shrubs.

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter may move short distances (less than 3 feet) away from plant bases. Woody litter should remain beneath plant 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):** Surface textures range from sand to loamy fine sand. Soil site stability is expected to range from 1-2 in the interspaces and range from 3-4 under plant canopies.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The surface horizon is typically at least 2 inches deep. Structure is typically weak (thin to medium) platy structure or weak fine granular. Color is typically yellowish red (5YR 5/6), but can vary depending on source parent material.

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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 dominate canopy of shrubs with scattered herbaceous plants. The presence of plant canopy (20 – 40%) and biological soil crust aid in reducing runoff and improving infiltration. When well vegetated and sufficiently covered with biological soil crust and litter this site is moderately effective at capturing precipitation.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None, but bedrock occurs between 10-20 inches of the surface.

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: Blackbrush >>

    Sub-dominant: Cool season grasses > warm season grasses >= succulents > half-shrubs >

    Other: Forbs > Cacti > annual grasses

    Additional:

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 survive in all except during the most severe droughts. Severe winter droughts affect shrubs and cool season grasses the most. Severe summer droughts affect warm season grasses the most. During prolong droughts blackbrush will drop its leaves to conserve plant moisture.

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Average annual production on this site is expected to be 250 – 350 lbs/ac in a year of normal production.

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: Blackbrush and broom snakeweed are all native to the site but have the potential to increase and dominate the site. Cheatgrass, redbrome, filaree and Russian thistle are non-natives that have the potential to invade.

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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 droughts.
