

## Ecological site R035XB226AZ Sandstone/Shale 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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Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- Number and extent of rills:** Very few (<5% cover) expected on this site due to rock fragment cover and gentle slopes. Slighter more expected (<8% cover) on higher slopes.
- Presence of water flow patterns:** The water flow patterns are widely spaced and uniform, the average length is 5-15 feet long with 1-5% coverage across the site. Flow paths should be less than 12 inches wide.
- Number and height of erosional pedestals or terracettes:** Only very few low terracettes along water flow patterns. There is some slight mounding (less than 1 inch) around long-lived perennial grasses and shrubs. These should not be considered pedestalling
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 10 to 40%.
- Number of gullies and erosion associated with gullies:** None expected, but can occur where adjacent sandstone breaks and rock outcrop concentrate on-site water flow.
- Extent of wind scoured, blowouts and/or depositional areas:** None expected, due to loamy textures and amount of

rock cover on surface. There is some slight mounding occurring around the bases of shrubs.

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7. **Amount of litter movement (describe size and distance expected to travel):** The majority of the fine herbaceous litter (<1/8") are moved by wind and water in flow paths, and only the medium size herbaceous and coarse woody litter remains and accumulate under the shrubs.

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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 soil stability average rating range from 2 to 3. Soil stability with canopy ranges from 4 to 5 and with no canopy ranges from 1 to 2 in the interspaces.

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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 fine granular structure, the color is dark reddish brown-5YR, and surface thickness ranges from 2 to 3 inches.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The site is dominated by shrubs and makes up the majority of the plant composition (75%) and along with rock fragments help reduce splash erosion and slow runoff. However, the lack of good herbaceous perennial cover and moderate bare ground cover limits the sites ability to effectively capture and hold runoff.

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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. Soil can be very shallow (<10 inches) to bedrock.

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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: Shrubs (blackbrush, Torrey Mormon tea, Stansbury cliffrose) >

Sub-dominant: Low growing shrubs (broom snakeweed, shadscale, Bigelow sagebrush) >>

Other: Perennial grasses > forbs > cacti and succulents

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Prolonged droughts can affect shrubs and cool season grasses especially if there are insufficient winter moisture. On this site, there is a 5-10% decadence in shrubs and succulents species.

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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):** The site has an expected annual production of about 200-250 lbs/ac during normal 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: Blackbrush is native to the site, but has the potential to become the dominant species. Snakeweed is also a native species but also has the ability to increase and dominate a site after heavy grazing. Introduced annuals such as cheatgrass and Russian thistle have the ability to increase and co-dominate the site after heavy continuous grazing or disturbance.
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17. **Perennial plant reproductive capability:** The only natural limitations to reproductive capability are weather related and natural disease or herbivory that reduces reproductive capability. All plants native to this site are adapted to the climate and are capable of producing seeds, stolons, and/or rhizomes except during the most severe droughts.
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