

## **Ecological site R035XC337AZ Sandstone/Shale 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	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### **Indicators**

- 1. Number and extent of rills:** Somewhat common, especially on steepest slopes. Rills less than 10 feet long due to fine-textured soils and scattered perennial plant cover. Sites armored with coarse fragments (gravels and channers) will have shorter rills and less frequent.
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- 2. Presence of water flow patterns:** Somewhat common throughout site. Water flow patterns may be long with low sinuosity and connected on steeper slopes. On sites armored with coarse fragments will have less evidence of flow patterns, but still common. Water flow patterns will show some signs of deposition.

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3. **Number and height of erosional pedestals or terracettes:** Some long-lived plants may show some slight pedestals of less than a ½" on slopes and edges of flow paths. Terracettes are common.
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expected bare ground range 15-35 percent depending on surface fragments. Well developed, intact biological crust should not be counted as bare ground. Rock fragment cover can range up to 75 percent.
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5. **Number of gullies and erosion associated with gullies:** None to very few. When site is well vegetated and covered with rock fragments gullies are stable and will only show minor signs of active erosion.
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6. **Extent of wind scoured, blowouts and/or depositional areas:** Deposition and blowouts by wind are not expected.
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7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement or redistribution by water is common and expected in water flow patterns due to steepness of slopes. Some litter removal in water flow patterns is expected.
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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):** The expected average soil stability is 3. Surface fragments, litter, and vegetation cover aid in reducing erosion.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface horizon is 2 to 4 inches deep. Structure is mostly weak thin platy parting to moderate very fine granular structure. See specific soil survey for additional site information.
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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 relatively even distribution of perennial grasses with scattered half-shrubs, forbs, large shrubs and widely scattered trees. The vegetation when well distributed across the site leads to slowing runoff and allowing for moderate infiltration.
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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: Warm season perennial grasses (Alkali sacaton & galleta) > Half Shrubs ( Shadscale saltbush, Bigelow sage)

Sub-dominant: Cool season perennial grasses > Large shrubs (fourwing saltbush, Stansbury cliffrose)

Other: Forbs > Trees

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 the shrubs the most. Severe summer droughts affect grasses the most.
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14. **Average percent litter cover (%) and depth ( in):** Litter amounts can increase following wet years and decrease during drought years.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** The expected annual total production in an average year is 350 – 450 lbs/ac.

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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: Shadscale saltbush, broom snakeweed and rabbitbrush are all native to the site, but may have the potential to increase with continued disturbance. Cheatgrass, annual wheatgrass, and Russian thistle are non-native annuals that have the potential to invade the site with or without 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 during the most severe droughts.
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