

## Ecological site R035XC313AZ Loamy Upland 10-14" p.z.

Accessed: 05/07/2024

### 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	04/30/2008
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

1. **Number and extent of rills:** None.

2. **Presence of water flow patterns:** Water flow patterns are noticeable, but are widely scattered, short (< 10 feet), and erratic.

3. **Number and height of erosional pedestals or terracettes:** No pedestalling, but mounding underneath long-lived shrubs is common as is turf building of ½ to 1 inch in blue grama rings.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is < or = 55 percent.

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter may move several

feet in larger storm events.

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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 soil surface is protected by a surface cover of gravel (10 percent) and cryptogams (5 to 10 percent). This combined with the soils ability to cap or crust over provides protection against erosion.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The soil surface is protected by a surface cover of gravel (10 percent) and cryptogams (5 to 10 percent). This combined with the soils ability to cap or crust over provides protection against erosion.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Randomly scattered plants consisting of about 75 percent grasses, 15 percent shrubs and 10 percent forbs promote infiltration and reduce runoff. The average distance to the nearest perennial plant (fetch) is 5 to 7 inches, with the majority ranging from 2 to 10 inches, but occasionally as far as 15 inches.
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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. The percent gravel increases at about 5 inches.
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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: Grasses (70 to 80%) >> Shrubs (15 to 20%) > Forbs (5 to 10%)
- Sub-dominant:
- Other:
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Expect to observe dead centers in blue grama and bottlebrush squirreltail and up to 5 percent mortality of Wyoming big sagebrush, more in extended drought.
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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):** Average annual production on this site is expected to be 800 to 900 lbs/ac. in a year of average annual precipitation.
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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 (*Bromus tectorum*) is commonly found in small amounts on the site (< 2 percent). During years of above average winter and spring moisture the composition of this may increase slightly. Severe disturbance may cause an increase in this or other invasive plants creating a potential for a shortened fire frequency on the site which could result in crossing a threshold to a state with increased introduced annual plants and fewer native shrubs.

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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/or rhizomes except during the most severe droughts.
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