

Ecological site R035XC306AZ Clayey 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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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:** None

3. **Number and height of erosional pedestals or terracettes:** No pedestals, but turf building is common under long-lived perennial grasses and shrubs.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is <50%.

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):** Litter does not move appreciably

except during the largest storm events.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface of this site normally seals, developing a very strong cap very resistant to erosion.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** The surface of soils associated with this site are moderate thin platy structure parting to strong very fine angular blocky; extremely hard, very firm, very sticky, and very plastic. Color is reddish brown (2.5YR 4/4) dry and dark reddish brown (2.5YR 3/4) moist.
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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, 20 percent shrubs and 5 percent forbs promote infiltration and reduce runoff. The average distance to the nearest perennial plant (fetch) ranges from 4 to 8 inches with the majority ranging from 1 to 10 inches but occasionally as far as 20 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):** No compaction layer, although a harder clay layer is encountered about 15 inches below the soil surface.
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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 (65-80%) >> shrubs (15-30%) > forbs (1-5%)
- 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):** In "normal" precipitation years mortality should be no more than 10 percent. During periods of prolonged drought mortality may be much higher, especially on half-shrubs and 80 to 90 percent death on Wyoming big sagebrush has been observed.
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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 700-800 lbs/ac in a year of average 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: Russian thistle (*Salsola kali*), cheatgrass (*Bromus tectorum*), and lambsquarter (*Chenopodium album*) are commonly found in small amounts on the site (< 2 percent). During years of above average winter and spring moisture the composition of these may increase slightly. Severe disturbance may cause an increase in one or all of these 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.

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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