USDA Natural Resources
Conservation Service

Ecological site R035XD405AZ
Gypsum Upland 7-11" p.z.

Accessed: 05/11/2025

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	04/28/2008
Approved by	S. Cassady
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:** In areas of < or = 5 percent slope no water flow patterns occur. In areas of > 5 percent slope water flow patterns are common, but they show no signs of erosion and little litter movement.

3. **Number and height of erosional pedestals or terracettes:** Long lived perennial grasses and shrubs show signs of turl building. No pedestalling is seen on galleta, but some is seen on bunch grasses such as alkali sacaton.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges from 65 to 70 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):** Litter naturally accumulates under

shrubs. Little movement occurs due to wind or water transport.

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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 has a natural crust which is very resistant to wind and water erosion.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Thin platy structure; slightly hard, friable, sticky and plastic. Color is yellowish red (5YR 5/6) dry; reddish brown (5YR 4/4) wet.

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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 65 percent grasses, 25 percent shrubs and 10 percent forbs promote infiltration and reduce runoff. The average distance to the nearest perennial plant (fetch) is 9 inches, with the majority ranging from 2 to 14 inches, but occasionally as far as 24 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):** The soils associated with this ecological site have a high percentage of clay and silt making the soil “hard”, but this is natural and is not a compaction layer.

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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 (60 to 70%) >> Shrubs (20 to 35%) > 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):** Shadscale (Atriplex confertifolia) will naturally die back (dead branches as well as dead plants) during periods of drought. Galleta (Pleuraphis jamesii) will also show a substantial number of dead plants. During “normal” precipitation years the overall number of dead plants on the site should not be more than 10 percent.

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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 is expected to be 500 to 600 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: Blue mustard (Chorispora tenella), Russian thistle (Salsola kali), and cheatgrass (Bromus tectorum) 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.

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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 drought

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