

Ecological site R035XB237AZ Clay Loam Terrace 6-10" p.z. Sodic

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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:** Rills may occur occasionally due to clay loam and clay textures, slow permeability, moderate to high shrink/swell (cracking) characteristic of may soils, and rare flooding. The number and length of rills will be limited by the generally low slopes on the site. Rills should be uncommon due to moderate plant cover potential of the site.
- Presence of water flow patterns:** Water flow patterns may be due to the slow permeability of the soil, high shrink/swell characteristic of the soils and rare flooding. Patterns should be short (less than 8') and discontinuous due to moderate plant cover potential of the site.
- Number and height of erosional pedestals or terracettes:** none
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground ranges 35-55% and has the potential to produce a heavy amount of plant cover and litter due to an average available water capacity of 10.7 inches. Drought may cause increase in bare ground.
- 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 and woody litter will be transported throughout the site by water during rare flood events. Herbaceous litter will also be redistributed by wind.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soils have moderate shrink/swell properties and cracking may be common on the surface. If cracks do occur on the surface, this process will reduce aggregate stability. When well vegetated and not subjected to severe flood events, these soils have a low to moderate resistance to water erosion and a moderate resistance to wind erosion. Average Site Soil Stability are 1.5 (range 1-4), averages with canopy are 3 to 4, averages with no canopy are 1 to 2.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is mostly moderate thick platy structure parting to strong very fine granular. The A-horizon thickness is 2-6 inches. The A-horizon color did not differ significantly from the subsurface soil horizons.

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 grasses with scattered shrubs. There may be small patches or a light overstory of large shrubs. Vegetative canopy cover ranges from 15-35% (grasses > shrubs > forbs). Basal cover ranges 5-12% (predominantly grasses) for vascular plants and 0-1% for biological crust (moss > lichen > cyanobacteria). Both canopy and basal cover values decrease during a prolonged drought. This type of plant community is moderately effective at capturing and storing precipitation.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None. Naturally there would not be a compaction layer, but these soils are easily compacted when wet and disturbed. Most of the soils may be easily compacted when wet due to clay loam and clay textures, lack of rock fragments, and occasional moisture from flooding. Most soils have a naturally granular surface structure.

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:

Sub-dominant: perennial bunch grasses > perennial sod-forming grasses > shrubs >>

Other: annual grasses = annual forbs > perennial forbs

Additional:

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.

14. **Average percent litter cover (%) and depth (in):** Litter amounts increase during the first few years of drought, then decrease in later years.
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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 400 to 500 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:** Broom snakeweed, mound saltbush, and greasewood are native to the site but may have the potential to increase and dominate after heavy grazing. Saltcedar, Russian knapweed, and camelthorn are non-natives that have the potential to invade the site with or without disturbance. Cheatgrass is an non-native annual grass that has the potential to invade and dominate with or without disturbance. Annual wheatgrass and Russian thistle are introduced annuals that have the potential to invade after heavy continuous grazing or disturbance, especially if the site is near farm fields or disturbed lands.
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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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