

Ecological site R035XC305AZ Clayey Bottom 10-14" p.z.

Accessed: 04/20/2024

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	08/27/2012
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Very few expected due to the high plant cover potential site. Rills may occur due to finer textures, slow permeability, medium runoff, moderate to high shrink/swell (cracking) characteristic of many soils and rare to occasional flooding. The number and length of rills will be limited by the low slopes on the site.

- Presence of water flow patterns:** Water flow patterns (and occasional ponding) may be common due to the slow permeability of the soils. Water flow patterns should be short and shallow.

- Number and height of erosional pedestals or terracettes:** Few expected, pedestals should be very short and along water flow patterns. Terracettes should also be very short and stop at obstructions.

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is expected to be less than 20%.

- Number of gullies and erosion associated with gullies:** Very few expected. Due to occasional flooding and extra run-on moisture a few gullies can form in areas where water flow is concentrated from adjacent uplands. There should be no active erosion and the site should have vegetation stabilizing the gully.

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

7. **Amount of litter movement (describe size and distance expected to travel):** None expected. During or after severe droughts, a few minor areas of depositions or hummock clay deposits may be present.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface textures range from silt loam to clay, but are mostly sandy clay loam to clay. The expected soil stability average ranges between 3-5. When well vegetated and not subjected to severe flood events, these soils have a low to moderate resistance to water erosion and a high resistance to wind erosion.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil surface structure is usually moderate very fine granular structure that is massive. Surface horizon thickness is generally 2 to 10 inches. Some soils may have been altered by past farming practices and have altered soil structure and thickness. Color is variable depending upon parent material.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The site is characterized by a relatively even distribution of vegetation dominated by grasses with some scattered shrubs and lesser amounts of forbs. This plant community structure 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 expected. Some soils may have a naturally platy 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: Cool season grasses > Warm season grasses >

Sub-dominant: Large shrubs > Half shrubs >

Other: Perennial forbs > Annual forbs

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** All plants functional groups are adapted to survival in all but the most severe droughts. Severe winter droughts affect shrubs the most. Severe summer droughts affect grasses the most.

14. **Average percent litter cover (%) and depth (in):** Litter cover is mostly fines with depths usually less than ½". Litter depths will be the greatest under canopies. Of the total litter amount, it would be expected that approximately 80-90% would be herbaceous litter and 10-20% would be woody litter. 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 1000 to 1200 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:** Mat muhly, tumble grass, threeawn, snakeweed and rubber rabbitbrush are all native to the site, but they have the potential to increase and dominate the site after heavy grazing or surface disturbance. Russian thistle, filaree, cheatgrass, tamerisk and Russian olive are non-natives that can invade with or without disturbance.
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17. **Perennial plant reproductive capability:** All plants native to this site are adapted and are capable of producing seeds, stolons and rhizomes in all but the most severe drought.
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