

Ecological site R040XA118AZ Sandy Loam Upland 10"-13" p.z.

Accessed: 05/03/2024

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	02/08/2005
Approved by	S. Cassady
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- Number and extent of rills:** Infrequent, 40-60 feet apart, not well defined.
- Presence of water flow patterns:** Fairly common, cover approximately 10% of the area; approximately 30-50 feet in length before hitting an obstruction.
- Number and height of erosional pedestals or terracettes:** Most perennial grass and shrub plants have accumulated pedestals 1-2 inches in height, respectively. Terrecettes are 15-20 feet apart along water flow paths with a 2-inch elevation difference from above to below the terracete. Terracettes are not as stable as those observed in 12-16" pz, in that they are breached more often on this site.
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 40-45%; some areas have higher cover on gentler slopes and lower cover on steeper slopes.
- Number of gullies and erosion associated with gullies:** none
- Extent of wind scoured, blowouts and/or depositional areas:** none

7. **Amount of litter movement (describe size and distance expected to travel):** Herbaceous litter transported in water flow paths 30-50 feet in length and herbaceous litter moving from bare soil areas.
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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):** No slake test done. Expect ratings of 2-3 in bare areas, and 4-5 under shrub and perennial grass canopies.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak angular to subangular blocky; color is 10YR7/3 dry, 10YR5/3 moist; thickness to 13 inches.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** 30% canopy cover of large shrubs, succulents, half shrubs and grasses; 50-55% litter cover; approximately 2.5% basal cover; 25% of cover is perennial grasses; 30% of cover is trees and shrubs; cover is well dispersed throughout the site. Note: reference area has a higher cover of mesquite than expected for the site.
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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 on this site; bare soil areas have thin laminar crust from raindrop impact; penetrometer tests with weight drop distance from top of weight to top of impact ring = 2.24 feet were: average = 3.92 inches, s.d. = 1.19 inches. Tests outside IBP exclosure on SRER were average = 2.17, s.d. = 0.4.
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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: large shrubs (mesquite #1, desert hackberry #2, blue paloverde #3, and mormon tea) > perennial grasses > succulents > half shrubs = annual forbs & grasses.
- 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):** Approximately 50% basal cover of perennial grass species and 50% basal cover of sub shrub species has been lost due to prolonged 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):** 175 lbs/ac unfavorable precipitation; 750 lbs/ac normal precipitation; 1340 lbs/ac favorable precipitaton.
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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: mesquite, Opuntia, burroweed, & snakeweed are increasing not invading. Bufflegrass and Lehmann lovegrass.
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17. **Perennial plant reproductive capability:** Not affected even following several years of drought period for the region. Good age class distribution of plants.
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