

## Ecological site R040XB211AZ Loamy Swale 7"-10" p.z.

Accessed: 04/19/2024

### 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	03/07/2005
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Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

### Indicators

- Number and extent of rills:** Rills are uncommon but usually well vegetated and not eroding.  
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- Presence of water flow patterns:** Water flow patterns are common, discontinuous and a function of upland runoff.  
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- Number and height of erosional pedestals or terracettes:** None  
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- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 20-60%. Lower values expected in El Niño years.  
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- Number of gullies and erosion associated with gullies:** Uncommon  
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- Extent of wind scoured, blowouts and/or depositional areas:** No evidence  
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- Amount of litter movement (describe size and distance expected to travel):** All litter classes  
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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):** Soil surface resistance to erosion is good. Expect values of 1-3 in plant interspaces; 4-6 in plant canopies.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak thin platy to granular to subangular blocky with depth; 7.5-1R6/4 dry, 7.5-10YR4/4 moist; entisol - no A horizons.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Canopy 20-30%; 85-90% perennial grasses, 5-10% annual forbs and grasses, and <2-3% trees and shrubs. Cover is well dispersed throughout 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):** None
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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: trees & shrubs > perennial grasses > winter annuals > summer annuals > perennial forbs > succulents > cryptogams
- 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):** 0-50% canopy mortality
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14. **Average percent litter cover (%) and depth ( in):** Herbaceous litter is not persistent on this site and may be 35-60% in El Nino years.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 900 lbs/ac unfavorable precipitation, 1200 lbs/ac normal precipitation, 2000 lbs/ac favorable 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:** Sahara mustard (potential), London Rocket, Cheeseweed, whitethorn acacia, mesquit, jimmyweed, burroweed

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17. **Perennial plant reproductive capability:** Not impaired for shrubs, drought impaired for perennial grasses and forbs.

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