

Ecological site R041XB213AZ Sandy Wash 8-12" p.z.

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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.

Author(s)/participant(s)	Wilma Renken, Dan Robinett, Larry Humphrey
Contact for lead author	USDA-NRCS Tucson MLRA Soil Survey
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Approved by	Byron Lambeth
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None
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2. **Presence of water flow patterns:** Sandy stream channels braid through the site and occupy 35% of the area. Channel depth ranges from 6-12 inches and floodplain areas receive extra water as overbank flow in moderate and large run-off events.
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3. **Number and height of erosional pedestals or terracettes:** Pedestals are common on all longer lived grasses and sub-shrubs and are from 1-3 inches in height. Pedestals are common on large shrubs and range from 6-12 inches high (from rodent activity, erosion and sedimentation). Terracettes are uncommon on the site.
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground from a point cover transect (300 pts) run on site was 41%. Gravel cover was 6% and basal cover of live perennial plants was 1%. Bare areas (outside braided channels), often masked by annuals, are 3-4' in diameter, generally connected.
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5. **Number of gullies and erosion associated with gullies:** None
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None

7. **Amount of litter movement (describe size and distance expected to travel):** Both fine and coarse litter size classes are staying in place. In channels, all litter size classes are moving except large woody debris which catches in low growing tree branches.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Values from a soil slake test average 1.7. Soils are very sandy. There is no difference between areas without canopy and shrub canopy areas.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** A horizon is 8 inches thick, single-grained. Colors are 7.5 YR 6/4 dry and 7.5 YR 4/4 moist.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Trees and large shrubs are well distributed on site (20-30% canopy cover), sub-shrubs scattered across site (0-3% canopy cover), perennial grasses show a general association with trees and shrubs with scattered plants across site (10-12% canopy cover), annual grasses and forbs fluctuate with weather patterns. General hydrologic functioning: the perennial grasses slow/reduce the energy of surface run-off and promote infiltration; trees and shrubs deter surface water flow without slowing its energy.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** None present.

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: Dom.Mid-Grasses = Trees >>

Sub-dominant: Suffrutescent Grasses > Misc.Per.Grasses > Riverwash Shrubs = Misc. Shrubs > Annuals

Other:

Additional: Annual grasses and forbs fluctuate within ranking based on seasonal precipitation.

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality due to drought (2009 and very dry winter spring of 2011) is high on perennial grasses and sub-shrubs.

14. **Average percent litter cover (%) and depth (in):** From the pace frequency transect (300 pts.) litter cover was 50% on this date.

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 825 lbs/ac. in a below average year; 1800 lbs/ac. in an average year; 3150 lbs/ac. in an above average year.
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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 is native to site and has not increased in size or density. From transects mesquite canopy is 11% and density is 80 plants/ac. Catclaw acacia has 11% canopy on this site. Other invasive/non-native species: Enneapogon cenchroides (sofffeather pappusgrass), Bermuda, mustard, foxtail.
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17. **Perennial plant reproductive capability:** Slightly impaired by drought on perennial grass and sub-shrub species.
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