USDA Natural Resources
Conservation Service

Ecological site R040XB212AZ
Loamy Slopes 7"-10" 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.

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

Indicators

1. **Number and extent of rills:** Fairly common, 8-10 feet apart well vegetated by annuals in El Nino years, all rills have gently sloping banks.

2. **Presence of water flow patterns:** Uncommon; verland flow location difficult to determine due to high gravel cover.

3. **Number and height of erosional pedestals or terracettes:** Pedestals are uncommon only observed near naturally eroding rills; terracettes only formed by high densities of rock fragments.

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 5-10%, gravel cover 85-90%

5. **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):** Most litter size classes stay in place.

Fine classes may move 5-10 feet before being intercepted by plants of rock fragments.

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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):** Expect values of 1-3 in canopy interspaces, and 4-6 under plant canopies.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak thir platy to weak granular; thickness to 1 inch.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Canopy 20-25%: 50% shrubs (40% jojoba), 35-40% trees, 3-5% half shrubs, and 0-1% succulents. Cver 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: shrubs > trees = half shrubs > succulents. In El Nino years, annual forbs and grasses can be greater than all groups.

    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):** 10% of perennial grass plants have been lost in recent prolonged drought; 18, 68, 23, 10, 39 and 24% canopy cover mortality of cresote, mormon tea, paloverde, flattop buckwheat, range ratany and triangle bursage, respectively.

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14. **Average percent litter cover (%) and depth (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):** 300 lbs/ac unfavorable precipitation, 450 lbs/ac normal precipitation, 600 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, filaree, Mediterranean grass, red brome(at higher elevations of MLRA).

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