Ecological site R038XB205AZ
Limestone Hills 16-20" 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	
Approval date	
Composition (Indicators 10 and 12) based on	Foliar Cover

Indicators

1. **Number and extent of rills:** None to Slight. High cover of rock fragments minimizes the formation of rills.

2. **Presence of water flow patterns:** Flow paths are 1 to 2 feet long, highly sinuous, and difficult to detect due to the high cover of rock fragments and vegetation.

3. **Number and height of erosional pedestals or terracettes:** Pedestals and terracettes do not exist on most of the site due to gravel covers and vigorous herbaceous plants producing abundant litter.

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

5. **Number of gullies and erosion associated with gullies:** Infrequent but these do occur from historic and geologic erosion.

6. **Extent of wind scoured, blowouts and/or depositional areas:** None present on this site.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter moves 1-2 feet in flow paths before being trapped by rock fragments or plant bases.

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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 has very high resistance to erosion due to high gravel and plant cover. Gravel cover ranges from 15-30%. Expect soil stability values of 4-6 across site.

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Weak fine and medium granular, 1-2% SOM, 1.5-3 inches thick.

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Perennial grasses well distributed except in vicinity of larger clumps of evergreen shrubs promote infiltration in addition to high rock fragment cover.

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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 exists. Bt horizon of Silverstrike soil at 1.5 inches may be mistaken for compaction layer.

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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: Perennial grasses > large shrubs = sub shrubs

    Sub-dominant: annual forbs > perennial forbs in El Nino years

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** 0-5% overall mortality of all life forms except Desert buckbrush which has 80-90% mortality. Most other shrubs have 5-10% canopy mortality.

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14. **Average percent litter cover (%) and depth (in):** 50% litter at upper elevations of the site

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 570 lbs/ac below average rainfall year, 960 lbs/ac average rainfall year, 1260 lbs/ac above average rainfall.

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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: Wildoats, red brome.

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17. **Perennial plant reproductive capability:** Not negatively affected for most species other than desert buckbrush.