

## Ecological site R051XY277CO Basalt Hill 7-12 PZ

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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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| Contact for lead author                     |                                |
| Date  | 02/06/2005                     |
| Approved by                                 | Curtis Talbot                  |
| 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:** None to slight. Flow paths are short and disconnected. Broken by basalt surface rock.

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3. **Number and height of erosional pedestals or terracettes:** None to slight. Pedestals are minimal and associated with flow paths.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Expect 5% or less bare ground. Surface and sub-surface rock are inherent to this site.

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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

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7. **Amount of litter movement (describe size and distance expected to travel):** Some movement is expected due to steepness of slope. Distance varies from 1-2 feet following intense rainfall events. Litter will tend to hang up on surface rock.
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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):** Stability class rating anticipated to be 4-5 in the interspaces at soil surface.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface soils are very stony loam, calcareous, shallow and excessively drained. The A-horizon ranges from 2-4 inches in depth and color ranges from brown to dark brown. Surface structure is moderate fine granular. Rock fragments can makeup 35-85% of the volume.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** The distribution and composition of grass, shrub, tree/forb canopy and root structure reduces raindrop impact and slows overland flow providing increased time for infiltration to occur. Also, the abundance of rock on the surface, slows velocity of runoff and acts to increase infiltration.
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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: cool season bunchgrass > >
- Sub-dominant: shrubs > warm season bunchgrass >
- Other: forbs > cool season rhizomatous grass > trees
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Perennial vegetation should show minimal mortality/decadence except during extreme drought when some decadence or mortality is expected.
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14. **Average percent litter cover (%) and depth ( in):** 5-10% litter cover at 0.25 inch depth or less.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** 200 lbs./ac. low precip years; 350 lbs./ac. average precip years; 500 lbs./ac. above average precip years. After extended drought or the first growing season following wildfire, production may be significantly reduced by 50 – 100 lbs./ac. or more.

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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: Pricklypear cactus.
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17. **Perennial plant reproductive capability:** The only limitations are weather-related, wildfire, natural disease, inter-species competition, wildlife, and insects that may temporarily reduce reproductive capability.
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