

Ecological site EX044B01A036 Droughty (Dr) LRU 01 Subset A

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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	Kirt Walstad
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:** No Rills Present

- 2. Presence of water flow patterns:** Water flow patterns are rare in the reference condition. If present, they are most likely to occur on steeper slopes (>15%) and are inconspicuous, disconnected, and very short in length.

- 3. Number and height of erosional pedestals or terracettes:** No Pedestals or Terracettes present

- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is 15-25%

- 5. Number of gullies and erosion associated with gullies:** No Gullies Present

- 6. Extent of wind scoured, blowouts and/or depositional areas:** none

- 7. Amount of litter movement (describe size and distance expected to travel):** Movement of fine herbaceous litter may

occur within less than a foot from where it originated.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil surface stable with ratings of 4-6 under both canopy and interspaces. Abiotic crusts or root mats may be present. A Horizon typically 4-7 inches thick
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil Structure at the surface is typically strong to medium fine granular. The A horizon should be 4-7 inches thick with color, when wet, typically ranging in Value of 3 or less and Chroma of 3 or less. Local geology may affect color in which it is important to reference the Official Series Description (OSD) for characteristic range.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Evenly distributed across the site, bunchgrasses improve infiltration while rhizomatous grass protects the surface from runoff forces. The Droughty ecological site is well drained and has a high infiltration rate. An even distribution of mid stature grasses, ~65-70% of site production, cool season rhizomatous grasses 5-10% of site production along with a mix of shortgrass 5-10%, forbs 1-10%, and shrubs 1-10%.
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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):** Not present, some soils profiles may contain an abrupt transition to an Argillic horizon which can be misinterpreted as compaction however the soil structure will typically be fine to medium subangular blocky whereas a compaction layer will tend to be structureless.
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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: Mid-statured, cool season, perennial bunchgrasses

Sub-dominant: short bunchgrass = rhizomatous grasses ≥ shrubs = forbs = warm season grasses > subshrubs

Other: Annual native forbs & grasses are very rare

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Mortality in herbaceous species is not evident. Species with bunch growth forms may have some natural mortality in centers.
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14. **Average percent litter cover (%) and depth (in):** Total litter cover ranges from 30 to 40%. Most litter is irregularly distributed on the soil surface and is not at a measurable depth.
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Average annual production is 1025. Low: 725 High 1275 lbs per acre. Production varies based on effective

precipitation and natural variability of soil properties for this ecological site.

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: Non-native invasive species on this ecological site include: Dandelion (*Taraxicum* spp), Cheatgrass (*Bromus tectorum*), Field brome (*Bromus arvensis*), Spotted knapweed (*Centaurea stoebe*), Yellow toadflax (*Linaria vulgaris*), Leafy Spurge (*Euphorbia esula*), Kentucky bluegrass (*Poa pratensis*)

Note: this list may not be fully comprehensive as unknown populations of weeds may exist

Native species with the ability to indicate degradation however species presence alone does not imply degradation: Sandberg bluegrass (*Poa secunda*), Big sagebrush (*Artemisia tridentata*), Three-tip sagebrush (*Artemisia tripartita*), Broom snakeweed (*Gutierrezia sarothrae*), Rubber rabbitbrush (*Ericameria nauseosa*), Yellow rabbitbrush (*Chrysothamnus viscidiflorus*), Rocky Mountain juniper (*Juniperus scopulorum*), Douglas fir (*Pseudotsuga menziesii*), Ponderosa pine (*Pinus ponderosa*)

17. **Perennial plant reproductive capability:** In the reference condition, all plants are vigorous enough for reproduction either by seed or rhizomes in order to balance natural mortality with species recruitment. Density of plants indicates that plants reproduce at level sufficient to fill available resource.
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