

Ecological site EX044B01A134 Shallow to Gravel (SwGr) 10-14" PZ Frigid

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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

- Number and extent of rills:** This site is primarily on gentle slopes. Rills will not be present in the Reference State.

- Presence of water flow patterns:** Active water flow patterns will not be present in the Reference State.

- Number and height of erosional pedestals or terracettes:** None Present

- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare ground is between 20-25 percent.

- Number of gullies and erosion associated with gullies:** None Present

- Extent of wind scoured, blowouts and/or depositional areas:** This site has sufficient canopy cover to resist wind erosion. No wind scours, blowouts, or depositional areas will be present in the Reference State.

- 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):** Due to the coarse nature of the soil associated with this ecological site stability ratings will be low. Interspaces have ratings of 3-5 and under canopy will have values between 4-5.
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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 3-6 inches thick with color, when wet, typically ranging in Value of 5 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:** The Shallow to Gravel ecological site is well drained and has a high infiltration rate especially in the subsurface horizons. An even distribution of primarily mid stature grasses of site production, then cool season rhizomatous grasses along with a mix of shortgrass, forbs and shrubs.
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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):** Due to the coarse nature of the soil on this site, a compaction layer will not be present.
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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: rhizomatous grasses > short cool season bunchgrass = forbs = shrubs > warm season grasses
- Other:
- Additional:
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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 is 3% or less. Shrubs, subshrubs mortality does not exceed 5% for any given species.
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14. **Average percent litter cover (%) and depth (in):** Litter cover varies from approximately 20 to 40% with a median value of 30%; comprised of primarily herbaceous litter. Most litter is irregularly distributed on the soil surface and is not at a measurable depth. 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 850. Low: 550 High 1050. Production varies based on effective precipitation and natural variability of soil properties for this ecological site.

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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: Potential invasive (including noxious) species (native and non-native). Invasive species on this ecological site include (but not limited to) dandelion, annual brome spp., spotted knapweed, yellow toadflax, leafy spurge, ventenata, etc.

Native species such as Rocky Mountain Juniper, broom snakeweed, rabbitbrush spp., big sagebrush, blue grama, Sandberg's bluegrass, etc. when their populations are significant enough to affect ecological function, indicate site condition departure.

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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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