

Ecological site EX044B01A132 Shallow Limy (SwLy) 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

- Number and extent of rills:** Rills will be absent on gentle slopes; however on the steepest of slopes of this site (greater than 30%) small, short rills (less than 2-3 feet) may be evident after high precipitation events.
- 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 (15-25%) and are inconspicuous, disconnected, and very short in length.
- Number and height of erosional pedestals or terracettes:** Not Present
- Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground is high for this ecological site between 25-35 percent.
- Number of gullies and erosion associated with gullies:** Not present
- Extent of wind scoured, blowouts and/or depositional areas:** Not Present

7. **Amount of litter movement (describe size and distance expected to travel):** Litter movement will be minimal (often less than 12 inches) and will consist primarily of fine herbaceous leaves
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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):** Site Stability Ratings of 3-4 without canopy and 4-6 with under canopy/base. Biotic crusting and root mats may exist.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Structure trends to weak, fine granular. The A horizon is approximately 3 inches thick with wet Munsell colors Value 5 or less, Chroma 3 or less. Dry colors tend to be quite light prior to wetting. Official Series Description (OSD) for characteristic range. <https://soilseries.sc.egov.usda.gov/osdname.aspx>
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Site is well drained. The mixed fibrous rooting depth of dominant bunchgrasses combined with the taproots of forbs and shrubs in reference state allows for good infiltration. Plant cover (distribution and amount of canopy) currently adequate for site protection varies however. An even distribution of mid stature grasses (60-70% of site production), cool season rhizomatous grasses (5-10%) along with a mix of shortgrass (5-15%), forbs (1-10%) shrubs (5-10%), Subshrubs (0-10%), and trees (0-Trace).
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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
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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: Midstatured Cool Season Bunchgrasses
- Sub-dominant: Cool season shortgrasses > Shrubs = Forbs warm season grasses
- Other: Coniferous Trees rare
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Not Expected on this site
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14. **Average percent litter cover (%) and depth (in):** Litter cover is relatively thin and can be challenging to measure thickness on this site consisting of approximately 20% cover on average (rarely up to 30%)
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Production is 500lbs/acre to 750lbs/acre under reference normal conditions. Range of variability may be encountered outside of normal on some sites due to slight variations in aspect and topography.

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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: Non-native invasive species on this ecological site include (but not limited to): Dandelion (*Taraxicum* spp), Cheatgrass (*Bromus techtorum*), Field brome (*Bromus arvensis*), Spotted knapweed (*Centaurea stoebe*), and Yellow toadflax (*Linaria vulgaris*)

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

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17. **Perennial plant reproductive capability:** Capability very high. Density of plants indicates that plants reproduce at level sufficient to fill available resource. No restriction on seed or vegetative reproductive capacity. Plants are producing seed and/or reproductive tillers.
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