Ecological site R025XY038ID
ASHY SOUTH SLOPE 10-16

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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	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** Rills: can occur on this site. If rills are present they are likely to occur immediately following wildfire. Rills, when present, are weakly defined due to sandy surface textures.

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2. **Presence of water flow patterns:** Water-Flow Patterns: can occur on this site. When they occur they are short and disrupted by cool season grasses and tall shrubs and are not extensive. Permeability is rapid once the surface is moist thus reducing runoff.

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3. **Number and height of erosional pedestals or terracettes:** Pedestals and/or Terracettes: both can occur on this site. Terracettes are common and a natural occurrence on the site. Accumulation of sandy surface material develops on the uphill side of larger perennial grasses and shrubs. This accumulation is from concentrated flow or following intense rainfall events.

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground: data is not available. On sites in mid-seral status, bare ground may range from 30-50%. *Tortula ruralis*, a moss, is an important contributor to ground cover.

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:** Wind-Scoured, Blowouts, and/or Deposition Areas: can be found due to the sandy surface textures. Blowouts usually occur following a wildfire and will be noticeable by deposition around perennial bunchgrasses.

7. **Amount of litter movement (describe size and distance expected to travel):** Litter Movement: fine litter in the interspaces may move up to 5 feet following a significant run-off event. It generally moves onto terracettes. Coarse litter generally does not move except on the steeper slopes.

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Soil Surface Resistance to Erosion: values should range from 4-6 but needs to be tested.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Soil Surface Loss or Degradation: the surface horizon is typically 3 to 7 inches thick. Structure typically includes weak fine granular, and weak medium subangular blocky. Soil organic matter (SOM) is 1 to 4 percent.

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Plant Community Composition and Distribution Relative to Infiltration: bunchgrasses, especially deep-rooted perennials, slow run-off and increase infiltration. Tall shrubs accumulate snow in the interspaces.

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compaction Layer: not present.

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: Functional/Structural Groups: cool season deep-rooted perennial bunchgrasses > tall shrubs > perennial forbs > shallow rooted bunchgrasses. Deep-rooted perennials with fibrous root systems are needed for soil stability.

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Plant Mortality/Decadence: Wyoming big sagebrush and bitterbrush will become decadent in the absence

of fire and ungulate grazing. Grass and forb mortality will occur as tall shrubs increase.

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14. **Average percent litter cover (%) and depth (in):** Litter Amount: additional litter cover data is needed but is expected to be 5-10 percent to a depth of <0.1 inches. Under mature shrubs litter is >0.5 inches deep and is 90-100 percent ground cover.

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Annual Production: is 450 pounds per acre (504 kilograms per hectare) in a year with normal temperatures and precipitation. Perennial grasses produce 45-65 percent of the total production, forbs 10-15 percent and shrubs 20-40 percent.

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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:** Invasive Plants: include cheatgrass, leafy spurge, dalmatian toadflax, bulbous bluegrass, rush skeletonweed, musk and scotch thistle and diffuse, Russian and spotted knapweed, Russian thistle, and mustard.

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17. **Perennial plant reproductive capability:** Reproductive Capability of Perennial Plants: all functional groups have the potential to reproduce in favorable years.
