

**Rangeland Health—Reference Sheet** TECHNICAL GUIDE Section II USDA-NRCS-MT Rev. June 2014

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<p><b>Date:</b> <u>Rev. June 2014</u> <b>MLRA:</b> <u>58AE and 60BE</u> <b>Ecological Site:</b> <u>Shale 10-14” p.z.</u> This <i>must</i> be verified based on soils and climate (see Ecological Site Description). Current plant community <i>cannot</i> be used to identify the ecological site.</p> <p><b>Indicators.</b> For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for <b>each</b> community within the reference state, when appropriate and (3) cite data. Continue descriptions on separate sheet.</p>
<p><b>1. Number and extent of rills:</b> On Slopes &gt; 15% rill may be long (&gt; 5 feet) and continuous. If rills are present on slopes &lt; 15% they should be &lt; 3 feet long and not continuous.</p>
<p><b>2. Presence of water flow patterns:</b> Water flow paths may be obvious, regular and continuous with debris dams occurring only on lesser slopes.</p>
<p><b>3. Number and height of erosional pedestals or terracettes:</b> Pedestals up to 0.5 inch and terracettes at debris dams are common.</p>
<p><b>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are <i>not</i> bare ground):</b> Bare ground is &lt; 75%. Bare ground will occur in quite large areas.</p>
<p><b>5. Number of gullies and erosion associated with gullies:</b> Active gullies may be present on steeper slopes.</p>
<p><b>6. Extent of wind scoured, blowouts and/or depositional areas:</b> None.</p>
<p><b>7. Amount of litter movement (describe size and distance expected to travel):</b> Plant litter movement is expected.</p>
<p><b>8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different):</b> Surface Soil Aggregate Stability under plant canopy should typically be 3 or greater. Surface Soil Aggregate Stability not under plant canopy should typically be 2 or slightly less.</p>
<p><b>9. Soil surface Loss or Degradation (consider thickness of the surface horizon, soil organic matter and structure):</b> Use soil series description.</p>
<p><b>10. Effect of plant community composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:</b> Sparse plant canopy, slow infiltration rates, and the high amount of bare ground contribute to a naturally high runoff rate even in Reference condition.</p>
<p><b>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):</b> No compaction layer would be expected but soil surface is typically crusted when dry.</p>
<p><b>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: &gt;&gt;, &gt;, = to indicate much greater than, greater than, and equal to):</b> <b>Dominant:</b> Cool season, mid-stature, rhizomatous grasses = shrubs and half shrubs <b>Minor Species:</b> forbs = cool season, short-stature bunch grasses and sedges = Warm season, mid-stature, rhizomatous grasses = Warm season, tall-stature, rhizomatous grasses = Cool season, mid-stature, bunch grasses.</p>
<p><b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):</b> Some plant mortality and decadence (10 to 15%) is expected on this site.</p>
<p><b>14. Average percent litter cover (5% or greater).</b> Litter cover is in contact with soil surface with little evidence of biological activity.</p>
<p><b>15. Expected annual production (this is TOTAL above-ground production, not just forage production):</b> 425 to 500 #/acre (13 to 14 inch precip. Zone) 200 to 350 #/acre (10 to 12 inch precip. Zone).</p>
<p><b>16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, “can, and often do, continue to increase regardless of the management of the site and may eventually dominate the site”:</b> Halogeton, Leafy spurge, knapweeds, whitetop, Dalmatian toadflax, yellow toadflax, St. Johnswort, perennial pepperweed, Yellow sweetclover.</p>
<p><b>17. Perennial plant reproductive capability:</b> All species are capable of reproducing.</p>