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Contact for lead author: Great Falls Area Office, Great Falls, Montana Reference site used? No

Date: May 2005 MLRA: 43BN Ecological Site: Clayey 20'+ p.z. This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

<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 if needed.	<b>WF</b>
<b>1. Number and extent of rills:</b> Slopes most common on this site are between 0 – 8% and with 99% of the soil surface well-covered there are no rills even with the most extreme convection storms. Rills would be rare on slopes of 9 to 15%.	<b>1.0</b>
<b>2. Presence of water flow patterns:</b> Due to the soil surface being well covered and minimal slope there is no evidence of past or current soil deposition or erosion for this site.	<b>1.0</b>
<b>3. Number and height of erosional pedestals or terracettes:</b> Wind and water erosion will not be evident on this site, so pedestals and terracettes will not be present.	<b>1.0</b>
<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 should be no more than 1% on this site.	<b>1.0</b>
<b>5. Number of gullies and erosion associated with gullies:</b> Gully erosion will not be evident on this site.	<b>1.0</b>
<b>6. Extent of wind scoured, blowouts and/or depositional areas:</b> Appearance or evidence of these erosional features on the landscape would not be present on this site.	<b>1.0</b>
<b>7. Amount of litter movement (describe size and distance expected to travel):</b> Because there is little bare ground, litter movement will be minimal at most. Because the site is dominated by the taller bunchgrasses, litter size will reflect the height and diameter of the reproductive culms and leaves of these grasses as well as the lesser dominate mid-size grasses.	<b>1.0</b>
<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> Resistance to erosion will be high with soil stability values of 5 or 6; areas of bare soil on this site may have values less than 5 if not under plant canopy.	<b>1.0</b>
<b>9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different):</b> Soil surface structure is granular; A horizon depth is 6 – 12”.	<b>1.0</b>
<b>10. Effect of plant community composition (relative proportion of different functional groups) &amp; spatial distribution on infiltration &amp; runoff:</b> Dominance of taller, deep rooted bunchgrasses will maximize infiltration and minimize runoff throughout the site.	<b>1.0</b>
<b>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):</b> Will not be present generally, but there may be areas that have “healed” from former bison trails and wallows as well as more current livestock trails which could have a compaction layer below the soil surface.	<b>1.0</b>
<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> Cool season, taller bunchgrasses (Rough fescue, Richardson’s needlegrass) >> cool season shortgrasses (Idaho fescue, Parry danthonia) > shrubs > perennial forbs > sedges.	<b>1.0</b>
<b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):</b> Will be low for all functional groups in a given year. Prolonged droughts which last more than 3 years may show increases in mortality and decadence for all plant groups.	<b>1.0</b>
<b>14. Average percent litter cover (60 – 65%) and depth ( 0.5 – 1.0 inches).</b>	<b>1.0</b>
<b>15. Expected annual production (this is TOTAL above-ground production, not just forage production):</b> 2500 - 3000 #/acre. This would be the expected production for the reference state during adequate moisture years.	<b>1.0</b>
<b>16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, “will continue to increase regardless of the management of the site” and may eventually dominate the site:</b> Timothy, Smooth brome, Kentucky/Canada bluegrass, shrubby cinquefoil, Japanese brome, a variety of annual or biennial weedy forbs, larkspurs, fringed and cudweed sagewort, broom snakeweed, pussytoes, creeping juniper, field chickweed, Douglas fir, Ponderosa pine, Lodgepole pine, Limber pine, snowberry, serviceberry, cheatgrass, houndstongue, thistle spp., knapweed spp., leafy spurge.	<b>1.0</b>
<b>17. Perennial plant reproductive capability:</b> During adequate moisture years bunchgrasses will generally produce seeds, however the cool season rhizomatous grasses may not necessarily produce seed even with adequate moisture.	<b>1.0</b>