

Appendix 2.

**Ecological Reference Worksheet**

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**Date:** 3/21/2005 **MLRA:** 70 **Ecological Site:** Hills CP-3 This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.

<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 &amp; (3) site data. Continue description on separate sheet.</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Indicator Weight</p>
<p><b>1. Number and extent of rills :</b> With increased slope, these sites have the potential for rills to form, however rills should not dominate this site.</p>	
<p><b>2. Presence of water flow patterns:</b> With increased slope (greater than 30%), these sites have the potential for water flow patterns to dominate this site.</p>	
<p><b>3. Number and height of erosional pedestals or terracettes:</b> Some erosional pedestals may be present on slopes greater than 30%.</p>	
<p><b>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) :</b> Bare ground will be present up to 40%. Bare patches should be less than 12 inches in diameter.</p>	
<p><b>5. Number of gullies and erosion associated with gullies:</b> If unprotected by vegetative cover, these soils are highly susceptible to gullies and erosion associated with gullies.</p>	
<p><b>6. Extent of wind scoured, blowouts and/or depositional areas:</b> Soil blowing hazards can be moderate on this site when these soils are unprotected by vegetative cover.</p>	
<p><b>7. Amount of litter movement (describe size and distance expected to travel) :</b> Fine (plant material) litter movement 3-6 feet can be expected with increased bare ground.</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> Anticipated to be 2-3 at the surface and subsurface in the interspaces and 3-4 at the surface and subsurfaces under vegetation.</p>	
<p><b>9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :</b> Soils vary from Loam, Sandy loam to Clay loam and are generally stony, gravelly or cobbly, brownish in color with the A horizon 2-4 inches in depth. Soils are shallow to moderately deep over acid igneous bedrock, with moderate to moderately slow permeability.</p>	
<p><b>10. Effect of plant community composition (relative proportion of different functional groups) &amp; spatial distribution on infiltration &amp; runoff:</b> Grasses and forbs account for 73% of the annual herbaceous production for this site and make up 20% of the site composition. Infiltration is best with low intensity rainfall events. Runoff can be moderate during high intensity storms and accumulative rainfall events.</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> None</p>	
<p><b>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (&gt;&gt;), greater than (&gt;), and equal to (=) :</b> Warm Season bunch grasses&gt;=Warm Season stolon grasses&gt;=Cool Season bunch grasses&gt;Shrubs(Pinyon/Juniper, Sumac, Oak)&gt;Forbs(Buckwheat, Indian paintbrush)</p>	
<p><b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :</b> Most of the perennial grasses, forbs and shrubs are long lived. Extended drought periods tend to cause high mortality rates in the grass species and some forbs. Shrub mortality can occur with severe, multiple year droughts.</p>	
<p><b>14. Average percent litter cover ( 5-10% % ) and depth ( 1.2 inches).</b> Percent litter and depth will increase with multiple, above average rainfall years.</p>	
<p><b>15. Expected annual production (this is TOTAL above-ground production, not just forage production):</b> 400 lbs/ac in low precip years, 900 lbs/ac in average precip years, 1400 lbs/ac in above average years. Grass/grasslikes make up 65% of the total annual production.</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> Pinyon, juniper, and algerita species have the greatest potential to invade these sites when these sites deteriorate due to drought and overgrazing.</p>	
<p><b>17. Perennial plant reproductive capability :</b> Weather related and natural disease can result in reduced reproductive capabilities. If tree/shrub components dominate the site it can reduce reproductive capabilities of the native grasses and forbs.</p>	



