Ecological Reference Worksheet **MT-NRCS**

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Contact for lead author: Bozeman, MT **Reference site used? No**
Date: 04/06/2005 **MLRA: 58AC Ecological Site: Clay Pan 11-14" 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.

Indicators. 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 **each** community within the reference state (when appropriate), and (3) cite data. Continue descriptions on separate sheet if needed. **Weight factors** are either 0.5, 1.0 or 2.0. The default factor is 1.0. A maximum of 8 indicators may be changed to 0.5 or 2.0. The rest remain at 1.0.	**Wgt. Factor**
1. Number and extent of rills: Rills should not be evident in the reference state.	1.0
2. Presence of water flow patterns: Water flow patterns are generally not evident in the reference state. Following heavy thunderstorms, short (less than 3 feet), sinuous flow patterns may be apparent.	1.0
3. Number and height of erosional pedestals or terracettes: Wind and water erosion should not be evident in the reference state.	1.0
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are *not* bare ground): Bare ground is less than 30% in the reference state. In HCPC, bare ground should not exceed 18%.	1.0
5. Number of gullies and erosion associated with gullies: Gully erosion is not evident in the reference state.	1.0
6. Extent of wind scoured, blowouts and/or depositional areas: Small, isolated depositional areas (less than 10x10 feet) may be evident in the reference state following periods of prolonged drought. Under normal climatic conditions, these should not be evident.	1.0
7. Amount of litter movement (describe size and distance expected to travel): Litter movement varies by size and depth of litter. In the reference state, litter should be coarse perennial grass leaves, anywhere from 1.5 inches up to 4 inches in length, plus small shrub leaves and minimal forb litter. Litter will not move more than a couple of inches from where it originated.	1.0
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): Stability values of 3-4 in plant interspaces. Stability values of 4-5 under plant canopies and at plant bases.	1.0
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): Granular surface structure of <2 inch depth; subangular blocky to columnar structure from approx 2-8 inches in depth; brown to dark brown color. Organic matter approx 1-3%.	1.0
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Deep-rooted native perennial grasses optimize infiltration and runoff. Grasses should be spaced approx 3 to 6 feet apart in the reference state.	1.0
11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): No compaction layer present in reference state. Do not mistake the naturally occurring clay pan in the soil profile for a compaction layer.	1.0
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): cool season, mid-height, native perennial bunchgrasses >> native perennial and annual forbs > native shrubs.	1.0
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Plant mortality is very low; decadence is minimal except in prolonged periods of drought.	1.0
14. Average percent litter cover (20-30%) and depth (0.1 to 0.5 inches).	1.0
15. Expected annual production (this is TOTAL above-ground production, not just forage production): 800 - 1100 #/acre.	1.0
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: plains pricklypear, broom snakeweed, cheatgrass, Japanese brome, curlycup gumweed, Wyoming big sagebrush, greasewood, pepperweed, fanweed, blue grama (in amounts greater than 250 pounds/acre, or canopy cover values greater than 25%), fringed sagewort, cudweed sagewort.	1.0
17. Perennial plant reproductive capability: This is not impaired in the reference state.	1.0