Appendix 2.

Ecological Reference Worksheet

Author(s) / participant(s): Brenda Simpson

Contact for lead author : **Reference site used? Yes/No** No

Date: 3/8/2005 **MLRA:** WP-2 **Ecological Site:** Malpais 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 & **(3)** site data. Continue description on separate sheet.	Indicator Weight
1. Number and extent of rills : Potential for rill erosion is low due to the high percentage of surface rock and shallow depth to the parent basalt rock.	
2. Presence of water flow patterns: The potential for water flow patterns is usually slight to medium in the historic climax plant community. Water flow patterns are expected to be few due to the amount of surface rock and less than 2' long were they occur.	
3. Number and height of erosional pedestals or terracettes: Pedestals and terracettes are slight to moderate. Pedestals range from 1/4 to 1/2" in height.	
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) : Bare ground is approximately 8%.	
5. Number of gullies and erosion associated with gullies: Potential for gullies and erosion are slight to due to the high percent of surface rock and shallow subsurface basalt rock.	
6. Extent of wind scoured, blowouts and/or depositional areas: Potential for wind erosion and soil blowing is slight under normal conditions with the historic climax plant community. In severe weather, at 400 pounds or less of production, wind erosion can be severe, especially in areas where alluvium and windblown sediments have accumulated	
7. Amount of litter movement (describe size and distance expected to travel) : Movement of fine litter (1cm or less) to moderately coarse (greater than 1 cm) is slight, however with the decline of cover, it can become moderate. In extreme weather, litter can be transported in excess of 10'.	
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): The soil surface stability values ranged from 3 to 6, with an average of 4.7. There was no significant differences between the plant canopy and interspace areas.	
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) : The surface, 0-3" varies in texture from fine sandy loams, loams, clay loams and silty clay loams. It is typically a brown cobbly sand, clay or silt loam with a weak to moderately fine granular structure. There was good SOM both in the interspaces and also under the plant canopies.	
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: This is a warm season grass dominated site with a substantial forb component. The climax conditions would facilitate the highest potential for infiltration and reduced runoff and stabilize areas where substantial aolian deposits have occured, however, even under adverse conditions, the	
11. Prescence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): Potential for compaction layer is not present.	
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>) , greater than (>) , and equal to (=) : Warm season grasses>cool season grasses>shrubs=forbs	
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) : Most of the perennial plants are long lived. Grasses will nearly always show some mortality and decadence.	
14. Average percent litter cover (14 %) and depth (0.6 inches).	
15. Expected annual production (this is TOTAL above-ground production, not just forage production): The total annual production potential is 1,100 pounds per acre in favorable years, to 425 pounds per acre in unfavorable years.	
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": Potential invasive species on this site include rubber rabbitbrush, grey horsebrush, and broom snakeweed. Fringed sage may also increase in absence of herbacious competition.	
17. Perennial plant reproductive capability : All species should be capable of reproducing.	

Photograph (s)

MLRA : **Date :**

Ecological Site :

Photo # 1

Comments :

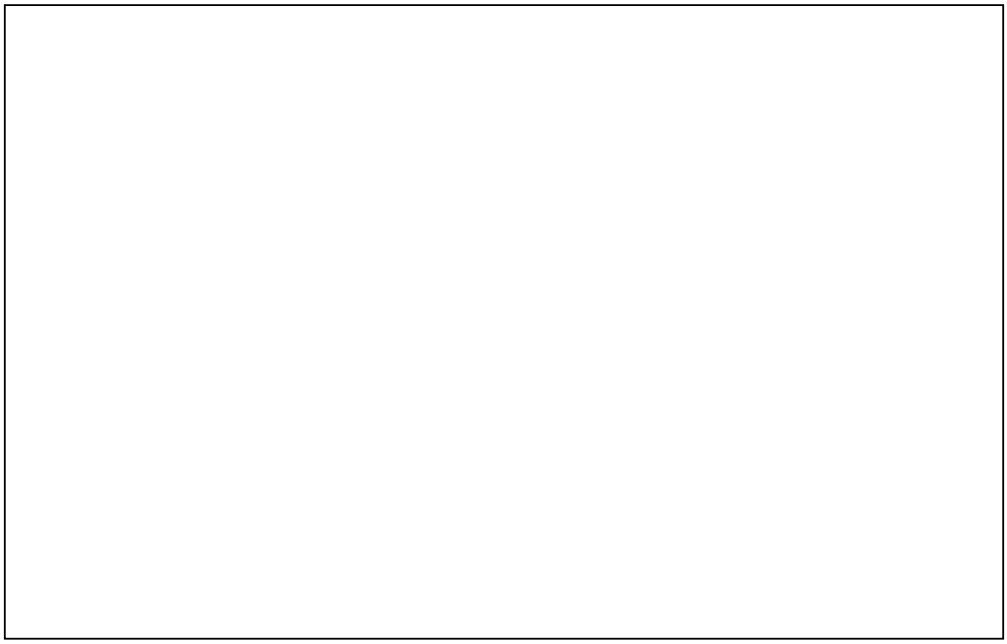

Photo # 2

Comments :

Appendix 4.

Functional / Structural Groups Worksheet

State NM **Office** Grants **Ecological Site** Malpais

Observers Brenda Simpson **Date** 3/8/05

Functional / Structural Groups			Species List for Functional / Structural Groups
Name	**Potential** [1]	**Actual** [2]	**Plant Names**
Biological Crust [3]			

Indicate whether each "structural/functional group" is a Dominant (D)(roughly 40-100% compositio), a**Sub-dominant (S)** (roughly 10-40%) composition) a**Minor Component (M)** (roughly 205% composition), or a**Trace Component (T)** (<2% composition) based on weight or cover composition in the area of interest (e.g., "Actual [2] column) relative to the "Potential [2] column derived from information found in the ecological site/description and/or at the ecological reference area.

Biological Crust [3] dominance is evaluated soley on**cover** not composition by weight