Appendix 2.

Ecological Reference Worksheet

Author(s) / participant(s): Don Ashby Jr., D'Llaynn Bruce, Jim Norris, John Hartung, Jerry Sparks

Contact for lead author : Don Ashby Jr. **Reference site used? Yes/No** No

Date: 1/3/2005 **MLRA:** 70 **Ecological Site:** Loamy CP-2 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 : None	
2. Presence of water flow patterns: None	
3. Number and height of erosional pedestals or terracettes: None	
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) : Bare ground may be present up to 38%. Bare patches should be less than 6 inches in diameter.	
5. Number of gullies and erosion associated with gullies: None	
6. Extent of wind scoured, blowouts and/or depositional areas: None	
7. Amount of litter movement (describe size and distance expected to travel) : Fine (plant material) litter movement, 1-3 feet, can occur during high intensity, short duration rainfall events.	
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): Anticipated to be 4-5 at the surface and subsurface in the interspaces and 5-6 at the surface and subsurfaces under vegetation.	
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) : Soils and deep loams, dark brown in color with the A horizon 2-9 inches in depth. Soils are well drained with moderately slow permeability on the uplands and alluvial fans.	
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Grasses and Forbs account for 90% of the annual herbaceous production for this site and make up 35% of the site composition. Infiltration is best with low intensity rainfall events. If Blue Grama becomes sod bound limited infiltration can occur.	
11. Prescence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): None. (Sod bound Blue Grama can be mistaken for soil compaction.)	
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 bunch grasses>Warm Season stolon grasses. Warm Season rhizome grasses>Other perennial forbs>Shrubs(Broomsnake weed, Yucca, Winterfat)	
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) : Most of the perennial grasses, forbs, shrubs are long lived. Extended drought periods tend to cause high mortality rates in the grass species, with some mortality in the forbs. Shrub mortality can occur in severe, multiple year droughts.	
14. Average percent litter cover (25 %) and depth (1.18 inches). Percent litter and depth will increase with multiple, above average rainfall years.	
15. Expected annual production (this is TOTAL above-ground production, not just forage production): 700 lbs/ac low precip. Years, 1150 lbs/ac in average precip years, 1600 lbs/ac in above average years. Grass/Grasslikes make up to 80% of the total annual production.	
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": Mesquite species have the greatest invasive potential for this site. In areas where mesquite has invaded, the potential to increase will continue regardless of management.	
17. Perennial plant reproductive capability : Weather related and natural disease can result in reduced reproductive capabilities. If Mesquite species dominate the site it can reduce reproductive capabilities of the native grasses and forbs.	

Photograph (s)

MLRA : 70 **Date :**

Ecological Site : Loamy CP-2

Photo # 1

Comments :

Photo # 2

Comments :

Appendix 4.

Functional / Structural Groups Worksheet

State NM **Office** Fort Sumner **Ecological Site** Loamy CP-2

Observers Don Ashby Jr., D'Llaynn Bruce, Jim Norris, John Hartung, Jerry Spa **Date** 1/3/05

Functional / Structural Groups			Species List for Functional / Structural Groups
Name	**Potential** [1]	**Actual** [2]	**Plant Names**
Warm Season bunch grass	D		Blue grama, Side Oats grama, Dropseeds
Warm Season stolon grass	D		Black grama, Vine mesquite
Warm Season rhizome grass	S		Tobosa, Galleta
Other perennial forbs	M		Croton, Thistle
Shrubs	T		Broomsnake weed, Yucca, Winterfat
Biological Crust [3]			

Indicate whether each "structural/functional group" is a Dominant (D)(roughly 40-100% composition), a**Sub-dominant (S)** (roughly 10-40%) composition) a**Minor Component (M)** (roughly 2-5% 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 solely on**cover** not composition by weight