Appendix 2.

Ecological Reference Worksheet

Author(s) / participant(s): Kenneth Alcon

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

Date: 4/26/2005 **MLRA:** 70A **Ecological Site:** Clayey Upland 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.

1. Number and extent of rills :

None

2. Presence of water flow patterns:

Typically none, if present (steeper slopes following intense storm events) short and not connected.

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) :

15-25% or less bare ground with bare patches generally less than 5 inches in diameter. Extended drought can cause bare ground to increase and ba patches are more evident.

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) :

Minimal and short small fine litter movement is more prevalent with any increase of slope or extreme storm 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):

Stability class rating anticipated to be 5-6 in interspaces at soil surface. These values need verification at reference site.

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) :

Average SOM is 1-5%. (Litle) A1-0 to 6 inches; grayish brown (10YR 5/2) clay loam, dark grayish brown (10 YR 4/2) moist; weak very fine granul structure; soft, very friable, sticky and plastic; many very fine and fine roots; strongly effervescent; 5 percent calcium carbonate equivalent; moderately alkaline; clear smooth boundary.

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

Diverse grass, forb, shrub functional/structural groups and diverse root structure/patterns reduces raindrop impact slows overland flow providi increased time for infiltration to occur. Extended drought reduces short and mid bunchgrasses causing decreased infiltration and increased runoff

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on thi site):

None

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 (=) :

Dominate:Warm Season short bunchgrass>**Subdominates**:Cool season mid rhizomatous=Warm Season bunchgrass>Warm Season mi rhizomatous>Warm Season Stoloniferous>Shrub**Others**: Warm Season Forbs>Cool Season Forbs> annual native grasses

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :

Typically minimal. Expect short/mid bunchgrasses mortality/decadence during or following drought.

14. Average percent litter cover (15-20 %) and depth (0.25 inches).

Litter cover during and following extended drought ranges from 10-20%.

15. Expected annual production (this is TOTAL above-ground production, not just forage production):

(Low Production 400 lbs./ac.) (Average RV Production 800lbs./ac.) (High Production 1,200 lbs./ac.) Production can be reduced following extend drought or the first growing season following wildfire.

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":

Invasive plants should not occur in reference plant community. However, cheat grass, Russian Thistle, kochia, and other non-native annuals m invade following extended drought if a seed source is available. Oneseed Juniper may encroach from adjacent sites with lack of fire. Blue Grama and

17. Perennial plant reproductive capability :

All plants should be vigorous, healthy and reproductive depending on disturbances i.e.. Drought. Plants should have numerous seed heads, vegetati tillers etc. The only limitations are weather related, wildfire, and natural disease that may temporarily reduce reproductive capability.

Photograph (s)

MLRA : **Date :**

Ecological Site :

Photo # 1

Comments :

Photo # 2

Comments :

Appendix 4.

Functional / Structural Groups Worksheet

State New Mexico **Office** Las Vegas **Ecological Site** Clayey Upland

Observers Kenneth Alcon **Date** 4/26/05

Functional / Structural Groups			Species List for Functional / Structural Groups
Name	**Potential** [1]	**Actual** [2]	**Plant Names**
Warm Season Short Bunchgrass	D		Blue Grama
Cool Season mid Rhizomatous	S		Western Wheatgrass
Warm Season mid Bunchgrass	S		Alkali Sacaton
Warm Season mid Rhizomatous	S		Galleta
Warm Season Stoloniferous	S		Vine Mesquite
Shrubs	S		Fourwing Saltbush, Pale Wolfberry, snakeweed
Warm Season Bunchgrass	M		Sideoats Grama
Warm Season Sod Forming	M		Buffalo Grass
Warm Season Patch Forming	M		Ring Muhly
Warm Season Forbs	M		Prairie coneflower,
Cool Season Forbs	M		Scarlet globemallow, penstemons, loco weed, variable senecio
Annual Native Grasses	T		Sixweeks Fescue, annual barely
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