

m 4/20/98

MARIETTA BURRO RANGE HABITAT RESTORATION PUBLIC MEETING, APRIL 20, 1998

The meeting was held in the Conference Room at the Carson City District BLM Office. It began at 1:00 PM on Monday, April 20, 1998. A list of the attendees is attached.

I. INTRODUCTION

After welcoming all the attendees to the meeting, Dawn Lappin explained that she has been involved with a group of diverse interests who are working collaboratively to improve range condition in the vicinity of Mina. The group is interested in the management of the Marietta Burro Range, which is producing below its habitat potential. The reduction of wild burro numbers has not shown an improvement. She encouraged all the attendees to become involved with the collaborative process.

II. COLLABORATIVE PROCESS

Tony Tipton discussed the collaborative process and gave a brief history of the Mina Management Team and the Twenty to One nonprofit organization. The process was derived from the philosophy that when people listen, they learn a great deal. Angry individuals usually have something important to say, and their goals are usually not different from the people who have ignored them in the past. The collaborative group works for an improved quality of life and the development of resource, social, and financial goals and objectives. The meetings use a professional facilitator, who may include Tommy Martin, Steve Rich, Don Green or Betty Green. Tommy Martin has been handling most of the meetings with the Mina Team.

Twenty to One was formed by individuals across the United States interested in the collaborative process and sustainable natural, human and financial resources. The nonprofit group uses the collaborative process discussed above to develop the goals, objectives, future landscape and manage needs. For more information about Twenty to One, refer to the attached proposal.

III. RESTORATION PROJECT (refer also to the Attached Proposal)

About three years ago, the Team addressed a proposed project to restore habitat in the Marietta Wild Burro Range. Based on the Mineral County Soil Survey, the habitat over much of the Burro Range is currently producing significantly below the site potential. BLM photo studies established in the 1970s indicate a continual downward trend. Experience in the vicinity of Austin, the Cedar Mountains and Candelaria show that animal disturbance can be used to increase seedlings and bring back perennial grasses. The key component to using livestock impacts is to allow time during the growing season for

plants to recover (rest). If plants are not allowed to rest, then the plants will eventually die.

The proposed project consists of aerial application of seed, followed by moving a large herd of cattle across the treatment area to apply the necessary disturbance. Since there is not enough forage in the Burro Range, the herd of cattle would have to be fed. Movements of the cattle will be controlled by water hauling. Enough acreage would need to be treated so yearlong burro use will not destroy the treated areas (20,000 acres per year estimated using a herd of 2,500 cattle). We might also use water to control the movements of the burros.

IV. SEEDING TRIAL (Refer to attached Monitoring Results)

Last July, Twenty to One and the BLM did a test seeding inside an enclosure in the Burro Range. Four treatments using cattle impacts, mulching and seeding were used inside the enclosure. A separate "control" area was fenced from the treatments and excluded from cattle, burro and rabbit use.

The attached Monitoring Results shows that there was a decrease in plant spacing due to seedlings in the treated areas (no seedlings in the Control area). Interestingly, there was not a significant difference between the one pound per acre seeding rate and the three pound rate. Ground moisture readings showed 15% soil moisture in the Control, and 35% soil moisture in the treated area.

An intensive treatment on a similar site in New York Flat (near Candelaria) in 1993 resulted in a similar increase in ricegrass seedlings. Monitoring results on April 17, 1998, showed that some of these seedlings survived.

The Marietta West Enclosure is in the area of the proposed treatment. According to the soil survey, this is supposed to be a grass - dominated, productive site. However, monitoring results show 3% ricegrass currently existing in the area with a 44 inch plant spacing outside the enclosure.

V. ACTIONS NECESSARY FOR PROJECT

The most critical need at this point is initial funding. Once the initial funding has been secured, the project will be self-perpetuating (cattle will be sold after first year treatment, range rested, then money from the sale of cattle will fund next year's treatment). A market must be found for the cattle (organic beef, "environmentally friendly" beef).

Since this will occur on public lands, the project will have to be supported by the BLM. The project would have to become a District priority because of the work load needed for cultural and environmental clearances, etc.

Support will also be needed from wild horse and burro proponents. The wild horse interests may see themselves as going into the livestock business and therefore may not support the project.

All attendees were invited to attend the monitoring session on June 3 - 7, 1998. This is where Team members learn about the resources first-hand. Attendees were also invited to the September 17 - 18 meeting (where we will have a refresher course in group dynamics) and the December 9 - 10 meeting (where we will go over this year's accomplishments and what needs changing).

4 Attachments:

1. List of attendees
2. Monitoring Results
3. Food for Thought
4. Marietta / Teals Marsh Restoration Project

RBenson (4/22/98)

April 20, 1998 Meeting

<u>Name</u>	<u>Address</u>	<u>Phone No</u>
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Earl McKinney	Carson City BLM	885-6130
DICK KNIPOON	Bx 547 MINA NV. 89422	702-573-2276
Rich Benson	Carson City, BLM	702-885-6124
Jim Granok	"	" 6000
Ben Wade	NPO, Reno	722 861 6625
LYDIA HAMMACK	VRWPA P.O. Box 996 VIRGINIA CITY NV 89440	702-741-0180
Bobbi Royle	Wild Horse Spoor 25 Lewis Creek Rd cc 89704	(702) 883-5488
Lawn Lappin	P.O. Box 555 Reno 89504	702-851-4817
Neal Brecheisen	5665 Morgan Mill Rd. Carson City, NV	(702) 885-6121
Elaine Letcher	Po Box 11733 Reno 89510	702-969-3357
DAN JACQUET	BLM, Carson City	702 885-6116
Jake Jacobson	" "	702/885-6136

APRIL 16 - 17, 1998, MONITORING RESULTS

I. SEEDING TEST (MARIETTA EAST ENCLOSURE)

Area	Treatment	Ave. Spacing 7/15/97 (Inches)	Ave. Spacing 4/16-17/98 (Inches)	% Ricegrass Seedlings (4/16-17/98)
Enclosure (Control)	No grazing	15.85*	22.85*	0
Outside Enclosure	Yearlong grazing from burros	16.23	17.1	0
Quadrant I	Concentrated cattle impacts only	14.01	17.56	28%
Quadrant II	Cattle / Mulch	11.68	14.8	80%
Quadrant III	Cattle / Mulch / 1 lbs. Indian ricegrass seed per acre	17.17	8.75	68%
Quadrant IV	Cattle / Mulch / 3 lbs per acre	16.25	7.37	56%

* The difference between 1997 and 1998 results is due to changes in methodology. Both live and dead plants were recorded in 1997; only live plants were recorded in 1998. For 1998, use the "Control" (no grazing) to compare treatments.

II. MARIETTA WEST ENCLOSURE (4/17/98)

	Ave. Plant Spacing	Percent Ricegrass	Percent Four-wing Saltbush	Percent Nevada Dahlia
Inside Enclosure	35.8	3%	70%	27%
Outside Enclosure	44.45	3%	39%	58%

III. NEW YORK FLAT

Date of Transect	3/9/93	6/11/95	4/17/98
Ave. Spacing	16.15 in.	5.37 in.	9.4 in
Number (Percent) Ricegrass Plants	23 (70%)	25 (76%)	27 (82%)
Ricegrass Age Structure	3 Mature 20 Decadent	17 Seedlings 2 Young 6 Resprouts	11 Seedlings 6 Young 2 Resprouts 7 Mature 1 Decadent

Food for Thought

Enclosed lakes and marshes are formed by, in the simplest terms, the net balance between annual precipitation and annual evaporation.

Lowering the mean annual temperatures of an area will increase the precipitation and decrease evaporation in that area, therefore creating more favorable conditions for expansion of lakes or marshes.

Enclosed lakes are found in arid environments and the lake surface area is small compared to the watershed areas. The enclosed lakes, in this country, have never overflowed in historical times.

Lake Superior has a lake surface area to watershed area ratio of 1:1.72. The lake surface area to watershed area ratio of the combined Laurentian Lakes (Great Lakes) is 1:3.19. The combined Great Lakes could never become an 'enclosed' lake because, the mean, annual precipitation of the area exceeds the mean, annual evaporation.

At it's fullest, Lake Lahonton had a water surface area of 8,422 square miles and a watershed of 40,000+ square miles, or a ratio of 1:5. The water body of Lake Lahonton, in 1885, had a water surface to watershed ratio of 1:26.* During the time of Lake Lahonton, temperature was about 7° F cooler and precipitation was about 12% higher (Theory).* History of Lake Lahonton - Israel Cook Russell, 1885

With the exception of a few species imported within the last 2-300 years, vegetation in this area has remained the same for 10,000 years. Although specie composition has changed at times, within the same time frame, the same native species are existing as were 10,000 years ago. Today, in arid environments, woody species and annual species seem to be increasing. Springs and ephemeral streams are drying up. There is historical evidence of prolonged drought but none of climatically wet periods to influence changes in vegetation.

The mean annual temperature difference between Elko and Mina is 8° F.

The National Weather Bureau has reported that during the last 40 years, in this area, annual precipitation is 12% above the 100 year average.

Some of us believe that by increasing ground cover and root structures of native perennial grasses we can improve the water holding capabilities of soil. Thus, lowering soil temperatures and allowing evaporation and evapotranspiration to occur over longer periods of time.

We have demonstrated that soil disturbance and a certain degree of compaction allows moisture to be retained longer, closer to the soil surface. This;

- encourages seedling and plant establishment and;
- allows for more water retention and cooling of the soil surfaces, which in turn;
- allows for a longer period of evaporation and evapotranspiration, which;
- increases the length of the growing season for both cool and warm season plants.

**MARIETTA/TEAL'S MARSH
RESTORATION PROJECT**

INTRODUCTION

The purpose of this project is to bring the diverse stakeholders interested in the area known as Marietta/Teal's Marsh together, to accomplish sustainable resource management of that area. The project is being proposed in order to restore burro habitat within the National Burro Refuge, which will in turn improve the watershed health and function of the area and restore the historic wetlands of Teal's Marsh.

PROJECT LOCATION

The project area is in south central Nevada, located in southern Mineral County (see attached map). The land base is administered by the Carson City District of the Bureau of Land Management. The project will encompass the historic mining areas of Marietta and Teal's Marsh.

HISTORICAL AND BACKGROUND DATA

Mining: Salt was being produced and hauled from Teal's Marsh to the mills in Virginia City and Aurora, Nv. as early as 1867, and later to the two mills located at Belleville, Nv., ten miles to the east. The Smith Brothers' borax mining operation at Teal's Marsh began in 1872, and was operating at peak capacity when the town of Marietta came into existence in early 1877. The town of Marietta, located near the northern end of the Teal's Marsh valley, is in the southern portion of the Silver Star Mining District, sometimes referred to as the Black Mountain District, and has an elevation of 4,940'. Marietta had its heyday as a Nevada silver and gold mining town between 1877 and 1879 and by 1891 was all but a ghost town. Total bullion produced from the Marietta area was about \$ 1,810,000 and the total borax production of the area produced \$ 930,000*. There are currently 7 full time residents living in the town of Marietta.

*Excerpts from Hugh A. Shamberger's publication "Historic Mining Camps of Nevada - Candelaria and It's Neighbors"

Teal's Marsh and Wildlife: US Geologic Service data and maps from the early 1870's indicate that Teal's Marsh was in fact a marsh with standing water and marsh vegetation and the periphery of the wetland supporting both grass and brush. One of the current residents of Marietta can recall ducks being hunted on Teal's Marsh as recent as the 1940's. Local residents of the area maintain that until the early 1960's, larger herds of migratory deer would winter in the area between Teal's Marsh and Jack's Spring.

Grazing: Domestic livestock grazing of the area has changed throughout the years. From the late 1800's until about 1940 large bands of sheep would be trailed into the area for winter grazing. Most of these animals came from California but at least one

band would come from central Nevada. Because water (springs) was a scarcity on the uplands, sheep could use the country in the winter and get most of their water requirements from snow. Water for the sheep was also hauled in railroad cars from a spring which the Carson and Colorado Railroad used. The railroad cars were filled with spring water from Railroad Springs and hauled to the top of Little Summit. The water was then used by the railroad and also piped into troughs just west of the summit for use by the sheep. Burros have been in the area since the mining operations of the 1870's. The burros within the refuge today are descendants of those used in the salt, borax, silver and gold mining operations. The cattle permits around the area were once part of those associated with the Flying M Ranch outside of Yerrington, Nv. See if Rich or someone has numbers of cattle and years of use, Tyree, McKay, etc. to finish out this section

EXISTING RESOURCE CONDITION

NRCS soil surveys of the project area, from the early 1980's, indicate that roughly 100,000 acres of the Teal's Marsh watershed have the potential to produce from 400 to 1500 lbs of dry matter per acre, per year, with the majority of it being native perennial grasses. These surveys also indicates a previously diverse specie composition which included: alkalai sacaton, inland salt grass, indian rice grass, galleta, basin wild rye, creeping wild rye, baltic rush, and needlegrasses; iodine brush, black greasewood, Torey's quail brush, shadscale, 4-wing salt brush, spiny menendora, and wolfberry; and globe mallow and evening primrose. In all areas, at least 50% of the annual production, was at one time, native perennial grasses. Current production of grasses, perennial and annual, in this area today is from 0 to 50 lbs of dry matter per acre, per year. There is no standing water or marsh vegetation and minimal brush in the historic marsh areas. BLM photos taken in the early 1980's of the area show a marginal grassland, whereas today grasses are nearly non-existent. Fecal analysis from the burros, taken in the early 1980's, indicate that at that time their diet consisted of predominately Indian rice grass. Today the analysis show the majority of their diet being browse species. Information from the National Weather Bureau indicates that the last 40 years have had more annual precipitation in this general area, than the previous 40 years. The numbers of large animals (cattle and burros) within the watershed area have been drastically reduced in the last 20 to 30 years, yet the desertification process has not been halted or even slowed down.

BACKGROUND AND RESULTS RELATED TO 20 TO 1

The Twenty to One Corporation was formed in 1993 and officially incorporated, as a non-profit group, in September, 1995. The individuals who formed this group did so because of a common belief that natural, human and financial resources can be managed in a sustainable manner, using a collaborative, holistic process.

The collaborative process this group uses is facilitator dependant and is a continuing, on-going process. The process identifies the goals, future landscape and production needs, and social/cultural needs of an identified land base. Those people who will affect or be affected by the decisions made are fully involved in the decision making process itself (i.e. - local populations, national concerns, international concerns, etc. making the decisions and being accountable for the results of those decisions on a

given land base). The facilitator(s) the group uses for this process have extensive experience dealing with diverse groups and individuals, both nationally and internationally, coming together to form common goals and objectives and working to achieve those goals.

Twenty to One, the Mina Management Team and their associates have spent the past ten years using this collaborative process to resolve pervasive conflicts in public land management in the Western United States. Using the collaborative management processes, besides resolving the 'people' conflicts associated with public land management, the group has also achieved the following results on land bases similar to the project area:

- Improved the quality and quantity of forage and vegetation, including an increase of native perennial plant cover and a reduction of bare ground and soil erosion;
- Increased plant and animal diversity on both uplands and riparian habitats;
- Increased size and health of existing riparian areas and regenerated historic springs and riparian areas;
- Reclaimed mine dump sites generating more production, diversity and habitat on those sites than can be achieved using conventional reclamation methods;
- Improved health, age structure and diversity of vegetation within a test plot in the Burro Refuge;
- In association with Nevada Department of Environmental Protection, Division of Water Quality and Quantity, has completed a watershed restoration project on public land;
- Currently working with a mining company to attempt reclamation of a heap leach pad test plot.

PROPOSED ACTIONS

Relying upon the past experiences and results in similar areas (soil types, vegetation types, ecological zones, etc.) Twenty to One and the Mina Management Team propose to restore the 100,000 acres of watershed surrounding the Teal's Marsh area. The actions necessary to accomplish this are:

- By use of the collaborative process, the team will establish and agree on the desired future resource condition of the area, with attention to flora and fauna elements. At this time, ideas for; seed lists, future desired plant species for the area, management of existing burro herd, fencing of existing springs as a management tool, etc. will be discussed and decided upon. Team meetings are a continuing, on-going process and will continue, on a regular basis, throughout the duration of the project.
- Baseline data on current resource condition and health (either existing or new) will be gathered together and compiled.
- Cattle will be used as the tool for restoration. Feeding cattle on the area will accomplish the objectives of; soil disturbance, incorporation of organic mulch into the soil for seedbed preparation, seed planting, and pruning of any existing grasses and browse for plant stimulation and health. Cattle will be controlled by the use of the feed itself, mineral, water (hauled or piped in with water point locations

frequently moved), temporary fence and herding. The feeding locations will also be moved daily.

- Monitoring of results (see section on MONITORING).

Due to the size of the project area, it is estimated that only 20,000 acres can be treated to the 'feeding' exercise each year. Therefore, this project is estimated to take five years for completion.

ANTICIPATED RESULTS

Based on prior experiences and results in similar areas and on the existing soil surveys the expected outcomes from this project are:

- Increase in the density and diversity of native perennial plant species in the watershed area surrounding the 'marsh', especially of the native grasses.
- Decrease of bare ground and soil erosion due to wind and water.
- Increase in water retention due to an increase of native perennial plant cover and root structures on the watershed - improved water cycle.
- Increase in marsh vegetation.
- Functioning wetlands in the marsh area.
- Increase in diversity and density of wildlife and migratory birds associated with improved habitat.
- New insights regarding wild horse and burro management.
- Sustainable habitat for the burro refuge.
- Groups and individuals with diverse management philosophies working together to achieve common goals.
- Management philosophies which are ecologically, socially and financially sustainable and can be used in other locations.
- "Outdoor Classroom" and other learning opportunities for the resource management professions.

Experience has shown that natural resource improvements can be monitored within the first growing season, although those improvements may be minute. By the end of the third growing season (or the third year of the project) results should become more identifiable.

MONITORING

The collaborative process which the Team uses for management decisions includes a procedure for the evaluation of results. The Team monitors all three resource areas, human, natural and financial, for health and sustainability and evaluated to determine effort, efficiency and outcomes. All monitoring information gathered in all three resource areas will be evaluated on an annual basis. The evaluation is conducted by the Management Team as a whole. The evaluative data is then used to determine if objectives and goals set by the Team are being met. The evaluated monitoring data from all three resource areas will be shared with all Management Team participants, donors, grantors and any other groups or individuals interested in the information. The monitoring will be:

Human, Social and Cultural Resource Monitoring in this resource area occurs on an annual basis and the team monitors itself from an individual and a team member basis. Once a year, at a facilitated Team meeting, each member fills out self and team evaluation worksheets (like the Keirsey Temperament Sorter, Dimensions of Team Effectiveness, etc.) to determine how functional the individuals and Team as a whole are. The results from this self evaluation is returned to the Team, as a whole, for further discussion and evaluation. This process allows Team members to identify and address any personality or philosophy conflicts occurring within the Team in an effective, functional, non-threatening, sustainable manner.

Financial Resource Monitoring of the financial resource is a two pronged effort. One area of monitoring deals with the improving financial resources of the community surrounding the project area. The other area identifies the financial sustainability of the project itself. The Team, with assistance from all members, and any other interested or affected individuals, monitors this resource area. The information gathered in both of these areas is reviewed by the Team on a regular basis (at least bi-annually) and used as a tool to make management decisions regarding the financial sustainability of the project. This project is expected to become financially sustainable within the first 18 months.

Natural Resource Monitoring of the natural resources will be done on an annual basis, during the first third of the growing season (late spring). This time of year is most favorable to identify perennial forbs, insect activity, etc. in the project area. The Team and any other interested or affected individuals will complete the monitoring in this area. The monitoring techniques to be used will include: photo points; biological monitoring of the soil, plants and animals of the transect area; nested frequency transects; riparian vegetation transect (modified green-line transect); soil pits (root depth, etc.) and soil composition/analysis; vegetation and forage samples (energy, protein and mineral); fecal samples of the cattle and burros to determine useable energy, protein and mineral; annual precipitation; and surface and ground water quantity and quality. Any other monitoring techniques deemed necessary by the Team members, or others, can be included into the monitoring process. The summarized monitoring data will be compiled on an annual basis and used by the Team as a tool to determine future management decisions of the project.

Expected Expenses:

Livestock: Anticipated purchase price of animals - figures are taken from the Feb. 2, 1998 CME (Chicago Mercantile Exchange) futures.

Steers	500#	\$.80 per pound
Heifers	460#	\$.74 per pound

2500 head of mixed steers and heifers, average August weight of 480# per animal. Average price of \$.78 per pound. $480\# \times .78 = \$374.40$ per head.

$\$374.40$ per hd. x 2500 hd = **\$936,000.00**

Equipment Rental:

Feed Trucks/wagons, Loader, storage tanks, etc. = **\$69,000.00**

Consumables:

Feed price includes hay/straw, mineral, salt, organic rumen enhancers, etc. and processing of animals. Water costs include equipment, maintenance and labor for hauling water.

Feed:

60% of diet = 21# per head, per day = 12.6# feed per animal
 $12.6\#$ per day x \$ 1.24 per animal per day = **\$744,000.00**

Water:

\$.27 per head per day x 2500 hd. x 240 days = **\$162,000.00**

Labor:

Labor includes all expenses associated with feeding and control of the animals (SIIS, FICA, etc.). Due to the nature of the project, labor must be figured for 7 days per week and 8 hours per day.

2.5 men @ \$18 per hour x 8 hrs. x 240 days = **\$86,400.00**

Contingency:

= **?***

Capitol Expense:

= **?**

Fencing: For control of livestock and burros the existing springs must be fenced. This cost would include materials and labor. Another capitol expense could include water development(s). Water developments would lower the expense of water hauling.

Expected Performance of Livestock:

2500 head less a 1.5% death loss = 38 head lost

- 38

2462 head to sell

2462 animals for sale at October, 1998 futures of \$ 71.70 per hundredweight.

240 days @ 2.9# gain per day = 696# + 480# (initial weight) = 1176#

Sell: 1176# x \$71.70 per hundred = \$843.19 per animal

$\$843.19 \times 2462$ head = **\$2,076,776.00**

Expected Return:

Expenses:

Livestock	\$ 936,000.00
Equipment	69,000.00
Consumables	<u>992,400.00</u>
total	\$ 1,997,400.00

Return:

	\$2,076,776.00
	<u>-1,997,400.00</u>
total	\$ 79,376.00

\$79,376.00 is enough to buy and apply Indian Rice grasss seed @ 1# of seed per acre on almost 10,000 acres, per year.

Board of Directors List for Twenty to One

Douglass E. Glenn, Retired CPA and CEO for Kafoury Armstrong, and Co. and active sportsman in Nevada, Idaho and Oregon. Winnemucca, NV

Tony Tipton, Rancher. Mina, NV

J. Rukin Jelks, III, Rancher. Elgin, AZ

Dan Daggett, Writer and Environmental Activist. Flagstaff, AZ

Eric Schwennesen, Rancher and International Resource Management Consultant for World Bank and Bank of Mexico. Winkelman, AZ

Jean Schwennesen, Rancher and Landscape Architect. Winkelman, AZ

Karen Riggs, Rancher and Civil Engineer for Cochise County, with emphasis on watershed functions. Willcox, AZ

R. H. (Dick) Richardson, PhD., Professor of Biology, Zoology, Genetics, University of Texas, Austin. Austin, TX

Current Team Members of the Mina Management Team and Assoc.

Facilitator(s): Tommie Martin and Steve Rich with Common Ground and Assoc., Payson, AZ. Don and Betty Green with Kennedy and Coe, Denver, CO

Mina Management Team Members:

Tony and Jerrie Tipton, Mina, NV

Dick Whidden, Miner, Mina, NV

Jerry and Sheri Mock, Golconda, NV

Roger and Nancy Johnson, Ranchers, Winnemucca, NV

Sydney Smith, Ecologist, USFS, Cedarville, CA

Stan Hunewill, Rancher, Wellington, NV and Bridgeport, CA

Jeff and Denise Hunewill, Ranchers, Wellington, NV and Bridgeport, CA

Todd Sceirine, Rancher, Wellington, NV

Judy Goedert, NDEP, Carson City, NV

Kay Corbett, Artist, Yerrington, NV

Carrie Eddy, Kinross Mining Co., Mina, NV

Brian Schrage, Kinross Mining Co., Mina, NV

Dawn Lappin, WHOA, Reno, NV

Richard Strong, Soil Scientist, Orinda, CA

Rose Strickland, Reno, NV

Dennis Ghiglieri, Reno, NV

Jerry and Sally Johnson, Colleville, CA

Rich Benson, BLM, Carson City, NV

Earl McKinney, BLM, Carson City, NV

Jake Jacobsen, BLM, Carson City, NV

Steep Weiss, BLM, Carson City, NV

Neil Brecheisen, BLM, Carson City, NV

Gary Brackley, NRCS, Reno, NV

Bill Kinney, PhD, Professor of Agriculture and Computer Science, Bluff, UT

8/1998

Marietta Burro Range Habitat Restoration

8/98



**A project proposed by the Mina
Management Team**

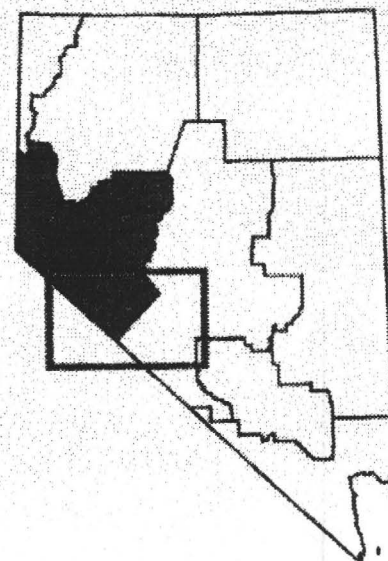
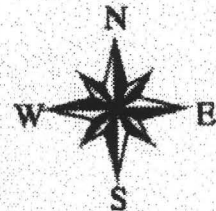
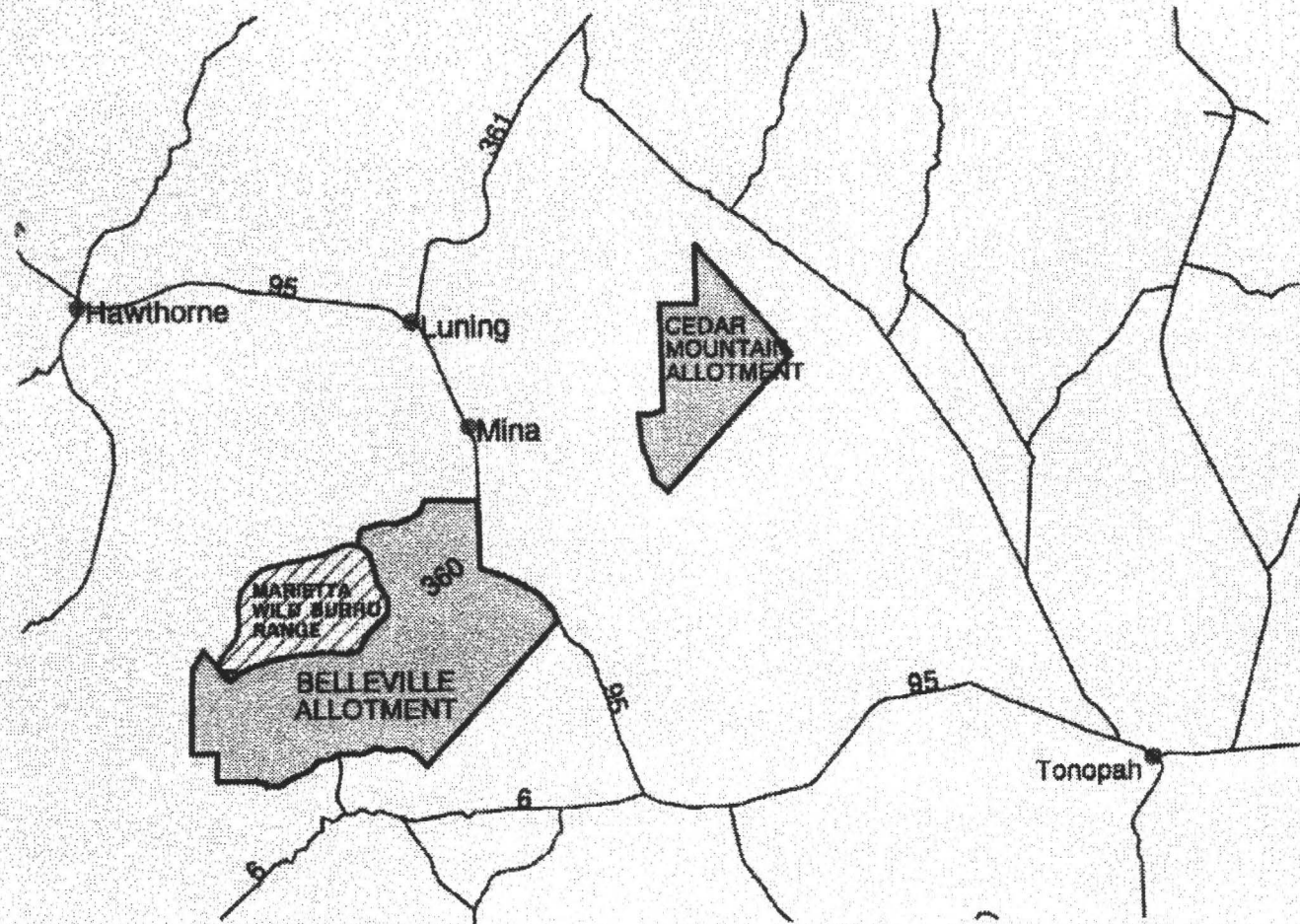
Project Goals

- Increase perennial grass production using the simplest methods available to management.
- Benefits will include improved plant diversity, decreased soil erosion and improved bighorn sheep, pronghorn, wild burro and non-game wildlife habitat.

Description of Environment

- ☛ Marietta Wild Burro Range - only formally recognized burro range in US.
- ☛ Located in Mineral County, Nevada, approximately 55 miles from Hawthorne.
- ☛ Important vegetation: Bailey greasewood, shadscale, fourwing saltbush, and Indian ricegrass.

LOCATION OF PROPOSED PROJECT



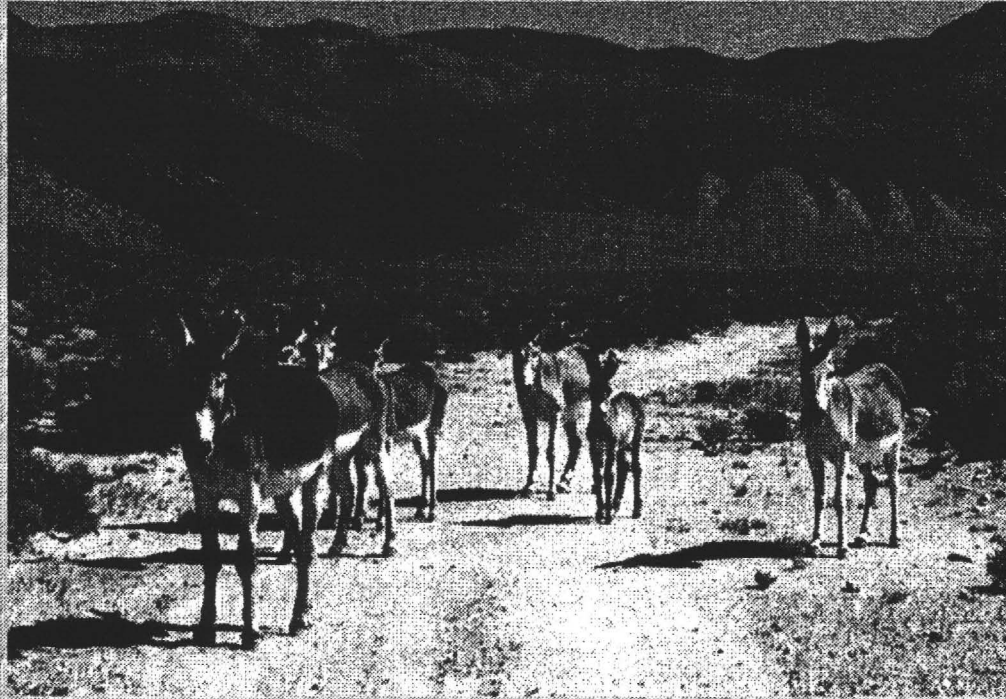
Map Date: August 24, 1998
Created by: Rich Benson

Map Projection: UTM, Zone 11, Datum NAD27
ArcView Project: /gis4/rbenson/marietta



Overlooking Teels Marsh, which is a major concentration area for the wild burros within the Burro Range

History of Marietta Wild Burro Range



- Dedicated in 1991 (20th anniversary of the Wild & Free-Roaming Horse and Burro Act).
- Grazing decision in 1992, dedicated large area exclusively to wild burro management.

Successes and Challenges

- Since establishment, burro population managed within initial management level.
- Perennial grasses important to wild burros diet.
- Plant community should contain 50 to 70% perennial grass - now less than 10%.



Monitoring Site in Wild Burro Range: brush and annual wild flowers, but not much perennial grass



Burros love ricegrass:

wild burros smashed
side of monitoring cage
to get to protected
Indian ricegrass plants.

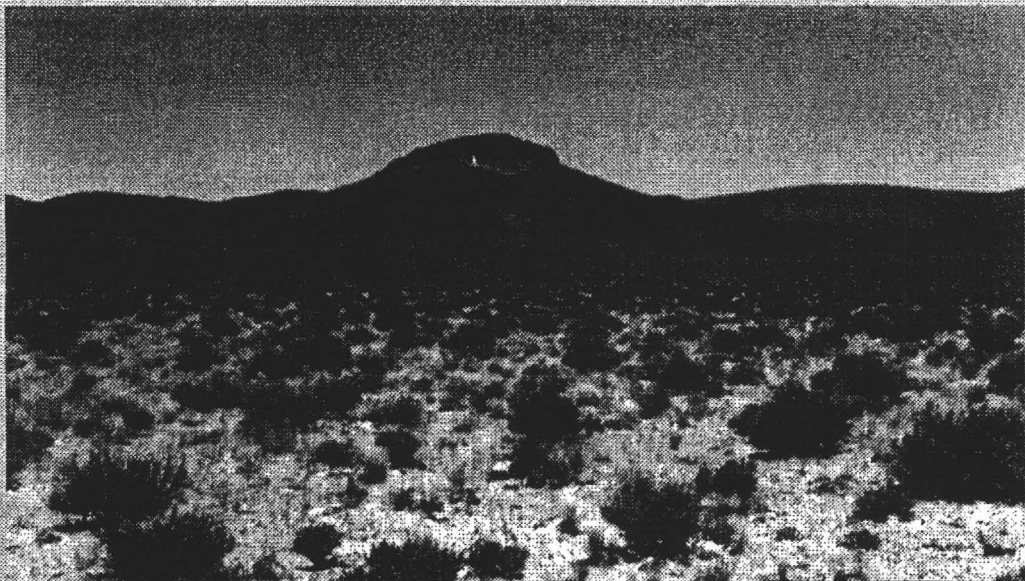
Management Considerations:

- ☛ Methods must have shown success on similar plant communities;
- ☛ Must allow for thriving wild burro population;
- ☛ Free-roaming behavior of the wild burros must not be restricted.

Success on Similar Sites

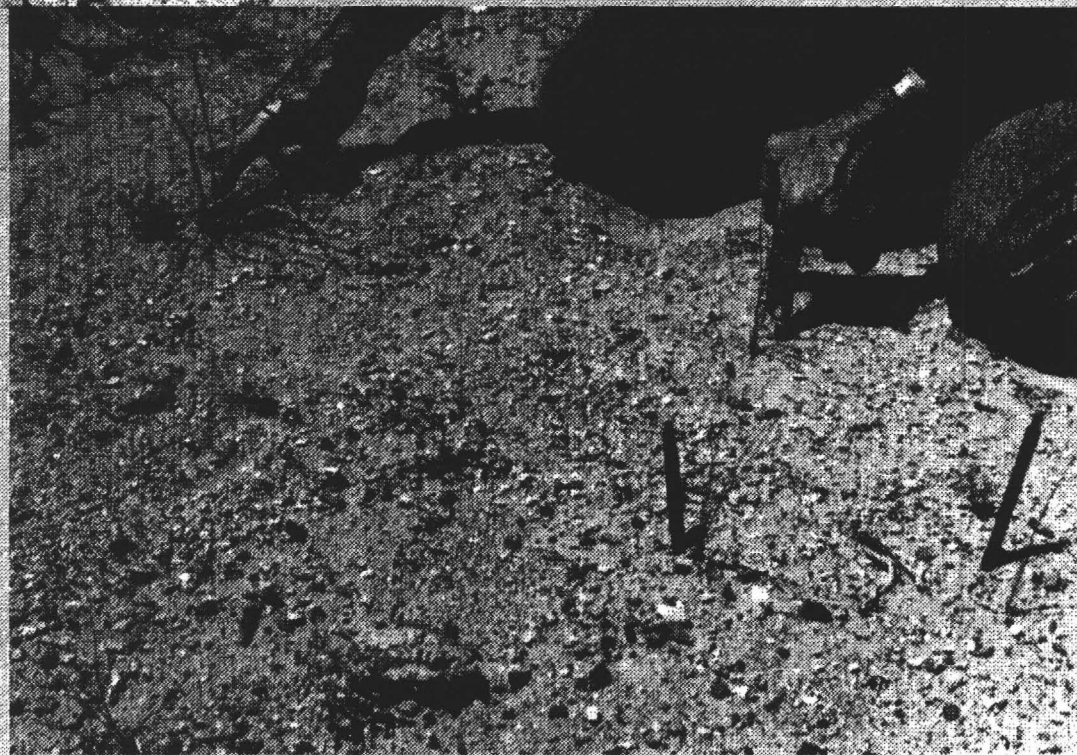
- Innovative livestock management in the adjacent Belleville Allotment;
- On one site, bare space between plants decreased from 16 inches to 5 inches due to ricegrass increase.

Belleville Allotment



Above: ricegrass plants previously identified as dead resprouted after treatment.

Below: ricegrass seedlings after treatment.



Seeding Trial (July 16, 1997)

- ☛ In order to test the use of animal impacts, an enclosure in Burro Range divided into five “treatments:
- ☛ 1) No Use “Control”;
- ☛ 2) animal impacts only;
- ☛ 3) impacts with hay mulch;
- ☛ 4) impacts, mulch, and 1 lb. ricegrass seed per acre;
- ☛ 5) impacts, mulch, 3 lbs. ricegrass seed per acre.

Marietta Seeding Trial

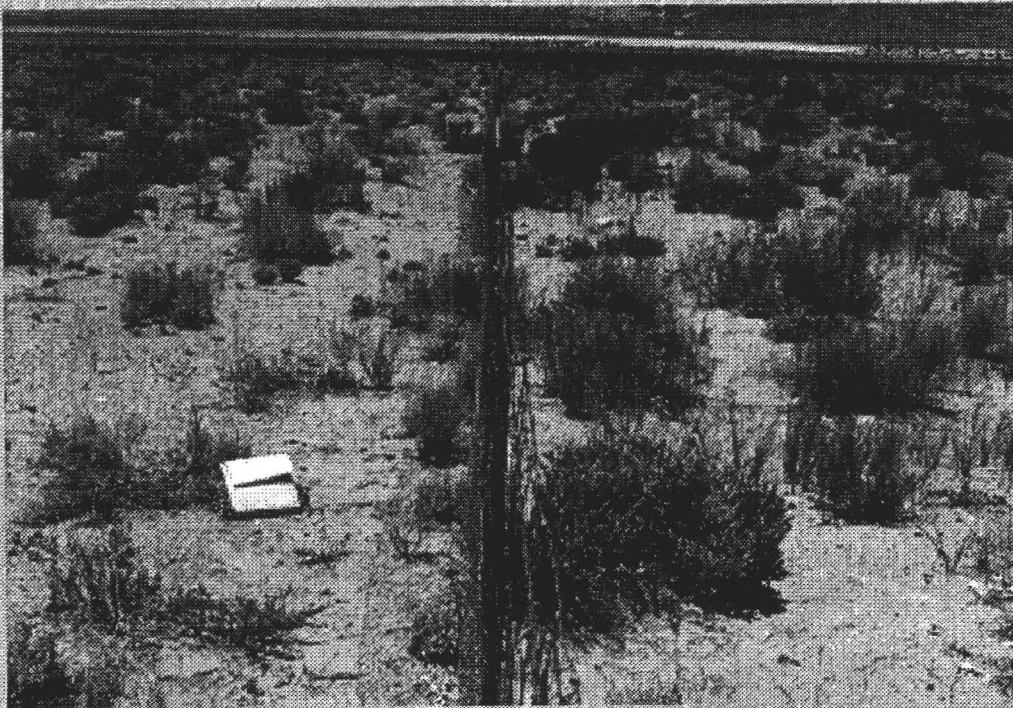


Right: mulch, hay, and “bovine bagels” worked into the soil. Existing plants impacted by grazing & hoof action.

Seeding Trial Study Results (June 25, 1998)

- ☛ 4% ricegrass seedlings in "Control";
- ☛ 1% outside exclosure (occasional use by wild burros);
- ☛ 56% on impacts only;
- ☛ 60% on impacts and mulch;
- ☛ 76% on impacts, mulch, and 1 lb seed / ac.;
- ☛ 90% on impacts, mulch, and 3 lbs / acre.

Seeding Trial Results



Above Photo: outside enclosure on left side of fence. Impacts, mulch and seed treatment on right side of fence.

Right Photo: detail of first-year rice-grass seedlings in 1998. Size ranged from “hair” stage to 28 inches in height.



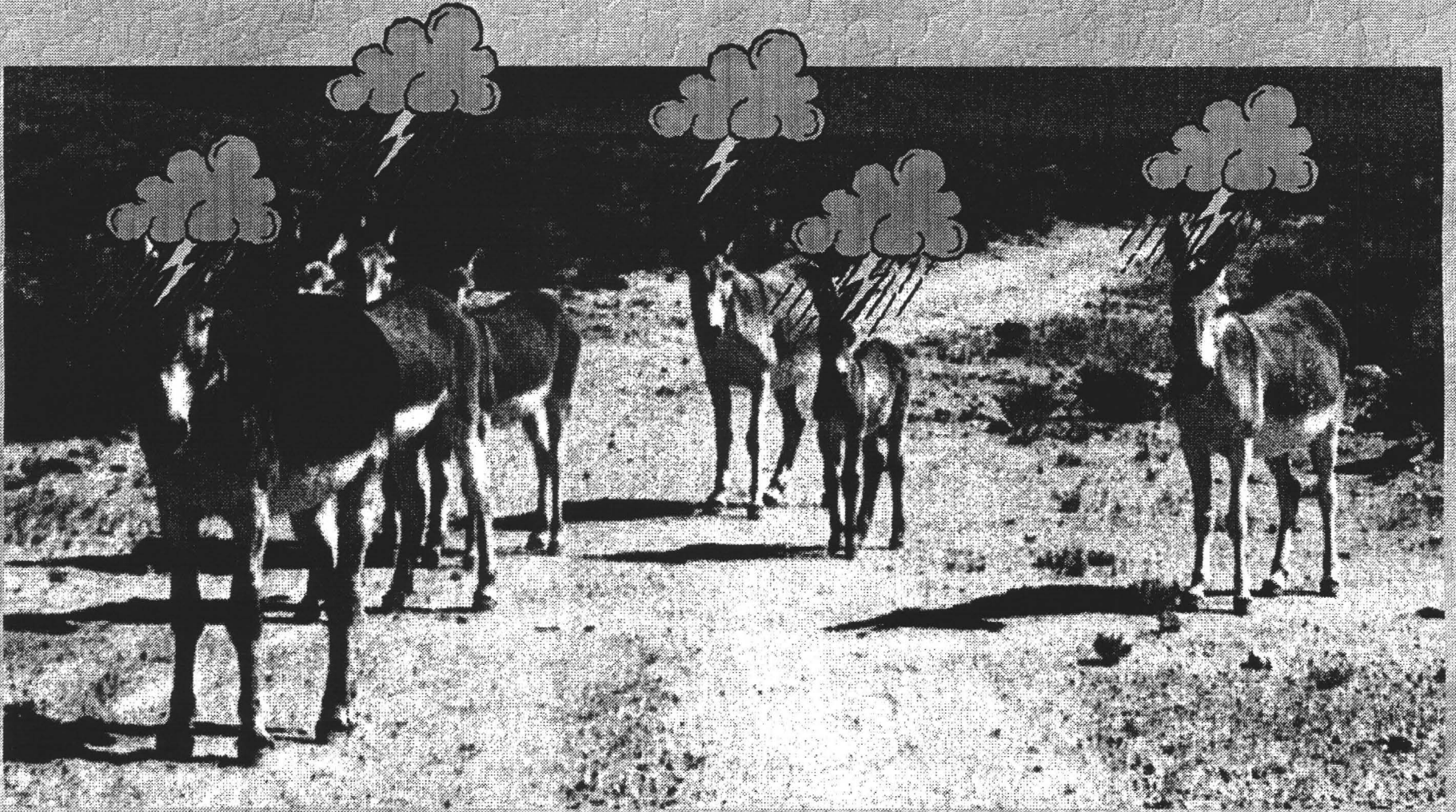
Challenges To Consider:

- Not enough wild burros to accomplish impacts;
- Forcing wild burros into a herding situation is against their nature and possibly illegal;
- Density of ricegrass is too low to act as seed source;
- Burros continually returning to treated areas causing stress on developing plant communities.

Mina Management Team Proposal:

- Use cattle for impacts;
- Spread seed prior to impacts;
- Due to lack of forage, cattle will have to be fed;
- Treat enough acres to diffuse wild burro impacts.

SO LETS GET THOSE BRAINS A STORMIN'



Field Report 1-14-98 Revs to Hawthorne 3 hours Re:

Field trip to Marietta Burro Habitat for soil & vegetative manipulation & rehab.

1st photo site is at Hospital pen at the NE Boundary coming into management area.

note: exceptional soils but very obviously devoid of perennial grasses. Grass species mounds are dead and break off easily. Soil is moist about 1 inch below surface. Rare sighting of grasses and comparison with photos from monitoring cages show continuous reduction of turros and exclusion of livestock has not accomplished the purpose for which reduction was intended - range recovery.

2nd photo site is at Marietta 14MA sign and looking towards the town of Marietta. Again the soil type is surprising, & begs the question why this great soil is not supporting a vigorous plant community.

3rd photo site is an enclosure wherein BSM drilled & seeded 4 wing and rice grass. If indeed any were successful the rodent population has consumed it as it is fenced to prohibit ~~of~~ rabbits. There is no obvious difference between the inside & outside plant community.

4th stop is at German Spring where it is evident that marsh recovery is very possible. An experiment to dig to the root bottoms of Salt Grass showed very deep roots w/ network to spread. ~~It~~ The soil was wet for the first foot, then dry another foot, & become wet again. A few yards further dig produced soil moisture to the point it would clump, and was

wet deeper. Discussion re: compaction holds more water.

There were many interesting & exciting assumptions for 1) why animals preferred one plant over another at different times of year, 2) Mineral content of plants in particular areas 3) Comparison with Necropsy info on animals in other areas, 4) adaptation of animals to particular areas.

My conclusion: Neither reduction of grazers or rest has accomplished its purpose so we need to explore the whip. To do nothing will continue the downward spiral affecting not only indigenous wildlife but livestock & the humans. The suggestion of using cattle, as they are more easily controlled, as a tool to rehabilitate the range is a concept worth trying.

120

- ① Hospital pen (white sage)
- ② Burro sign looking towards Marietta
- ③ enclosure

should drill 4 wing / rice grass
prod. 800 dry matter even year in just grass

Bunnies + Kangaroo rats

- ④ enclosure (age)

Mileage begin 453

3 hours Reno - Fallon - Gerixton - Hawthorne

1-14-98 Field trip to Marietta for planning
re: 20 to 1 group rehab project

note Aug. 1987 letter to Dyk from Norm Murray for James Elliott
would dedicate "majority" to burros.

my records show captures

220	1979	remove	160	leave	60
264	1983	"	189	"	75
163	1987	"	93	leave	70
	dedication	1991			85

unbelievable
pop. increase
the AML must
never have been
achieved.

population has been kept to 60-85 burros an
average w/ removals occurring every 4 years

note May 11, 1990

re: dedication "managed principally, but not
necessarily exclusively for wild burros."

HMAP AML 129 Burros

Overlap in German Sp area
cattle & burros

1983 utilization - severe 80% HMA

1985 " 2 1/2 yrs after removal - severe 80% util.

36 Known Spring Sites

2 certified water rights

3 springs are Public Water Reserves
avail for burros

7 are dry

16 available for burros (19pm) Riparian?

apply for appropriation jointly w/ permittee

Frequency transect re reading 4/9/14 yrs
Utilization Studies twice yearly for 2 yrs. (fecal anal. ?)

for Key Species

Pictures

⊕ Hospital Pen - approx 8-10 Burros use this area
no grass plants -