NV060-EAR8-85

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

SHOSHONE/EUREKA RESOURCE AREA

BATTLE MOUNTAIN DISTRICT

ENVIRONMENTAL ASSESSMENT RECORD

FOR THE

GUND RANCH R&PP SALE

(See attached Map and Legal Descriptions for Location)

Bureau of Land Management
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Bldg. 50, Denver Federal Center
Denver, CO 80225

I. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Actions

1. To transfer, under the Recreation and Public Purposes Act of June 14, 1926, 7796.51 acres of public land located in Lander and Eureka counties (See attached map and photographs) to the University of Nevada.

2. After the transfer of land is completed, it is proposed by the University of Nevada's Plan of Development to do the following actions: (See Appendix 1 for locations).

   a. Construct seven (7) miles of four-wire electric charged fence with two cattleguards.

   b. Forage manipulation by chemical 2,4D on 120 acres; forage manipulation by fire treatment on 120 acres; 160 reseeded with crested wheat grass.

   c. Reseed 500 acres of the Keystone seeding to crested wheat grass.

   d. Livestock water developments.

   e. Irrigation water developments (20-30 acres).

The land will be sold by the Bureau of Land Management as authorized in the Code of Federal Regulations 2740 and Public Law 95-278.

The United States would reserve title to any valuable minerals on the subject lands.

B. Alternatives

1. Lease or sell the land as authorized under FLPMA.

2. No action.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. Non-Living Components

1. Climate

The climate is generally termed arid to semi-arid depending on the elevation. Temperature variation is considered extreme, as frost can be expected any month during an average year.

Temperatures can vary from 40 degress below zero to 108 degrees. Average annual precipitation varies from eight inches at the lower elevations to over 15" in the mountain areas.

The majority of the precipitation occurs during winter in the form of snow. Spring rains of the "thunder storm" type occur and are essential for forage production since temperatures and wind prevents much of the snow moisture from being effective. The precipitation which falls in the form of snow is mainly important for aquifer recharge and the growth of grasses and forbs.

Relative humidity is very low throughout most of the year. The annual water evaporation rate is 60 to 72 inches.

2. Topography

Generally, the area is flat and rolling with low hills. Elevations range from 5643 feet to 6000 feet with 6% slopes in the valley to 30% in the benches and foothills. Aspect is generally east and west.

3. Soils

Soils in the area are variable and range from clayey to sandy skeletal. The clayey soils are shallow in depth and found on well-drained 4-8% slopes with moderate erosion potential. The fine-loamy soils range in depth from shallow to moderately deep and are found on well-drained slopes of 15 percent or less; with slight to moderate erosion potential.

Clayey skeletal soils range in depth from shallow to moderately deep and are found on well-drained slopes of 15 to 30 percent with slight to high erosion potential. Loamy soils are moderately deep and found on well-drained slopes of 50-75 percent, with high erosion potential. Loamy skeletal soils range from shallow to moderately deep on 30-75 percent slopes with moderate to high erosion potential. Sandy-skeletal soils are found on 50-75 percent slopes that are shallow and excessively drained with slight erosion potential.

Geology - Shale, chert and volcanic rock (andesite) are predominate in the mountains with alluvial fill below 6100 feet elevation.

4. Air and Water Quality

All of the streams in the area originate in the Simpson Park Range. Ephemeral stream flow results entirely from snow melt and flash-flood producing storms with a peak flow in early May. Sloughing and caving are frequently found in these channels and to a lesser extent in the mountains where the streams are of a perennial nature.

The quality of the water is generally good and is used by livestock and wildlife. Air quality is good and pollutants are minimal to nonexistent.

B. Living Components

1. Plants

Vegetation commonly found in the area includes:

Common Name	Scientific Name
Big sagebrush	Artemisia tridentata
Greasewood	Sarcobatus vermiculatus
Rubber rabbitbrush	Chrysothamnus nauseosus
Basin wildrye	Elymus cinereus
Shadscale	Atriplex confertifolia
Idaho fescue	Festuca idahoensis
Cheatgrass	Bromus tectorum
Alfalfa	Medicago sativa
Halogeton	Halogeton glomerata

No threatened or endangered plant species are identified in the immediate area as determined by A Report of Threatened and Endangered Species of Lander/Eureka/Nye Counties, by A. Holmgren et al, Utah State University, 1977.

2. Animals

Animals using the area include mule deer, mountain lion, domestic livestock, jackrabbits, cottontails, coyotes, ground squirrels, gophers, mice, sage grouse, chukar, and other non-game birds and animals. No rare or endangered animals have been seen in the area, but there have not been any surveys conducted to determine this possibility.

C. Ecological Interrelationships

The ecological interrelationships are typical of the sagebrush and northern desert shrub type.

The Simpson Park range on the east side of the proposed sale area has been indicated by the Nevada Department of Fish and Game as being a wintering range for mule deer. This area is also indicated as being a medium density chukar distri- area. However, no unique interrelationships are apparent.

D. Human Interest Values

A visual contrast rating has been completed (See ~~Att~~achment #1).

A wilderness inventory will have to be completed prior to sale of the land. A preliminary inventory implied that wilderness values are not present on the lands proposed for transfer.

Public meetings were held on the wilderness inventory results during the week of November 13-17, 1978, in Austin and Eureka. A comment period is also scheduled. If no wilderness values have been identified by the end of the comment period, then the land transfer can proceed. However, if wilderness values are identified, then the affected lands must be withheld from transfer pending Congressional action on the wilderness study area.

As stated in the Cultural Resources report, Preliminary Reconnaissance of Gund Ranch, by Davis, Jonathan O. and Elston, Robert, February 15, 1978 (BLM6-140(P). "Gund Ranch is a working, self-supporting ranch. Activities necessary to the operation of the ranch will be destructive to the archeological record whenever the surface of the ground is disturbed, as in plowing, discing, drilling, leveling, ditching, and trampling by animals. The damaging effect of such activities is essentially cumulative, so that the fact that an area has already been somewhat disturbed does not mean its cultural resources should be written off. This means that operation of the ranch will inevitably result in damage to the cultural resources on it, unless measures are taken to mitigate or prevent the damage."

Therefore, it is recommended that a complete Cultural Resources clearance prior to any action, project or activity on any of the R&PP lands after the sale is completed.

There are some mining claims adjacent to the subject lands (See attached map). With transfer of land, the mineral estate is reserved as cited in 43CFR 2741.6(d) and (e). All mining claims will have to be cleared before sale can be made as cited in 43CFR2741.2(d). The existing conflicts are minor (5 acres or less), and these areas could be leased or excluded from the sale (see the Land Report for this action).

III. ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES

A. Environmental Impacts

1. Anticipated Impacts

a. Proposed Actions

The actual transfer of ownership will not have any impacts on the land. However, after ownership has legally been transferred, there will be certain actions taking place on the subject lands that will cause impacts. These actions would include fencing, seeding, fire treatment, spraying, and water developments (See the attached University of Nevada Gund Ranch Activity Plan for complete detail of proposed actions).

Following is a discussion of each action and anticipated impacts.

(1) A loss of grazing privileges of range users on the subject lands will result from the proposed sale.

(2) Fencing

(a) There will be a slight disturbance to the vegetation and soil as a result of fence construction.

(b) There will be some particulate matter caused by the vehicles

(c) Fencing may present a barrier to migrating wildlife, electric-charged fencing could possibly harm raptors or other birds landing on the fence.

(d) Any land that would be fenced could cause public access problems.

(e) Fencing is a positive means of controlling animal distribution.

(3) Chemical Spraying with 2,4-D/atrazine

(a) Prevailing winds could cause the chemical to drift into areas where it could cause unwanted damage to existing vegetation.

(b) Particulate matter would be suspended in the air during the spray application.

(c) The 2,4-D would not only destroy unwanted vegetation but would also effect all other vegetation as well.

(d) The 2,4-D would tend to seep into the soil and infiltrate the ground water that may cause the drinking water to become polluted and unsafe for human and animal consumption.

(e) Depending on the toxicity levels, both livestock and wildlife grazing on vegetation that has been treated either intentially or accidently could become sick or even die.

(f) Chemical treatment can be both an economical and effective means of controlling unwanted and/or undesirable vegetation if done correctly.

(4) Fire Treatment

(a) Quality of forage may be decreased or increased by burning, due to changes in plant composition.

(b) The most important use of fire on ranges is to control woody species. This depends on the species to be burned as some species react different than others.

(c) Fire treatment has a beneficial impact in that it is economical and faster acting then chemical control.

(d) There will be particulate matter suspended in the air during the burning phase of the action.

(e) A blackened landscape will result causing a visual contrast to the surrounding unburned sites.

(f) Burning off the vegetation will destroy the watershed holding capacity of the existing vegetation which could result in flooding and erosion during the rainy seasons.

(5) Seeding

(a) Clearing and plowing the land would cause a brief increase in the particulate matter in the air.

(b) Clearing the land will have a negative impact on the sagebrush and rabbitbrush that will alter the cover and food for wildlife.

(c) The seedings would produce a change in the visual aspects of the landscape by adding a bright contrast to the otherwise drab monotonous character of the surrounding vegetation.

(d) Managing the bottomlands to bring back salt grass and Great Basin wildrye will increase the total food production from the parcel, for both livestock and wildlife.

(e) Increasing desirable vegetation will also increase prey populations which will benefit raptors and other predators.

(6) Livestock and Irrigation Water Developments

(a) Water developments could provide watering sites for livestock and wildlife.

(b) Alfalfa cultivation would increase the total food production from the parcel, for both livestock and wildlife. Bitterbrush would provide food and cover to wildlife.

(c) Development of irrigation waters could have an effect on the ground water supply by drawing it down as a result of using the well and sprinkler system.

(d) Livestock will tend to over-utilize and trample any water development.

b. Alternatives

(1) Leasing or selling the land as authorized under FLPMA would result in the same anticipated impacts as the proposed action would be the same if sold to the University of Nevada. If not, there is no way to determine proposed actions if sold to another party.

(2) No Action

If there is no action taken concerning the subject lands, then there will be no actions that would impact the environment.

2. Recommendations for Mitigation or Enhancement

a. Proposed Action

(1) Any carrying capacity for cattle that is lost with this sale will be taken from the University of Nevada's grazing privileges. No other range users' grazing privileges will be affected by this sale.

(2) Fencing

(a) Keep vehicles confined to existing roads and trails as much as possible during construction.

(b) Limit the number of trips up and down the fenceline to the number required to construct the fence and use the same tracks for each trip.

(c) Do not blade the fence line.

(d) It is recommended that 4-wire, Type-D Antelope Fence be used where applicable.

(e) Wildlife access to the Simpson Park Mountain will not be hindered.

(f) There will be two cattle guards constructed on the Grass Valley road to accomodate public access.

(g) Ensure that the electric charge is not of such magnitude that livestock or wildlife will be harmed if contact is made.

(h) Remove the fences when research is concluded.

(3) Chemical Spraying with 2,4-D/atrazine

(a) Apply spray during the morning hours and in a calm day to help prevent chemical drift and lesson the suspended particulate matter.

(b) Keep livestock and wildlife out of the sprayed areas until the toxicity levels are safe.

(c) Run periodic tests of the water in the area to ensure that levels of chemicals have not increased due to the spraying.

(4) Fire Treatment

(a) Depending on the type of vegetation, ensure that the time of burning is consistent with the desired results.

(b) Burn during the time of day that will help keep suspended particulate matter to a minimum. Do not burn during windy days.

(c) Revegetate as soon as possible to ensure soil holding capacity of new vegetation to help prevent erosion and flood damage.

(5) Seeding

Do not revegetate during high wind periods so that the least amount of particulate matter will become suspended and remain in the air.

(6) Livestock and Irrigation Water Developments

(a) Before irrigating procedures, check with the state water engineer to get an estimate of the water table and ground water recharge to see if it is sufficient to accomodate the loss of water through the wells and sprinkling system.

(b) Fence the spring sources to prevent livestock trampling and aid in wildlife use.

(c) Provide for livestock distribution by putting in troughs at various locations.

(b) Alternatives

(1) Leasing or selling the land as authorized under FLPMA would result in the same mitigating measures if the anticipated impacts remain the same.

(2) No Action

If there is no action taken concerning the subject lands, there will be no impacts to mitigate.

3. Residual Impacts

a. The livestock grazing license for the University of Nevada will be reduced by the number of AUMs lost due to the sale.

b. There will be particulate matter suspended in the air as a result of all the proposed actions.

c. There will be existing vegetation either destroyed or altered due to fencing, seeding, chemical and fire treatments.

d. There may be some alteration in the watershed soil holding capacity of vegetation due to the fire treatments.

e. There will be some chemical drifting into other areas where it is not wanted resulting in vegetative alteration.

f. Livestock will tend to overutilize water developments which will result in vegetative trampling.

g. Electrical charged fences will effect raptors as they land on them.

h. The fence line will be a visible contrast until the vegetation has a chance to reestablish itself along the scarred areas.

i. Ground water discharge and level of the water table may be altered by irrigation levels from the sprinkler systems.

j. There would be improved food production and cover resulting from the seedings and bottom land revegetation.

B. Long-Term Effects of the Proposed Action

If the subject land was purchased by the University of Nevada, they would use it for a range research facility which entails many actions that would ultimately increase the productivity and value of the land and be in keeping with Executive Order 11988 (42FR: 26951).

C. Irreversible or Irretrievable Commitments of Resources

The AUMs attached to the subject lands will be lost and will be taken from the University of Nevada's grazing privileges. It is recommended the BLM reserve a floating easement on the land east of Highway 21 to provide access and flexibility for UNR.

IV. MFP REVIEW

The Shoshone/Eureka Resource Area MFP has been reviewed and no conflicts exist.

V. PERSONS, GROUPS, AND GOVERNMENT AGENCIES CONSULTED

Tony Lesperance, University of Nevada

Bob York, Archaeologist, BLM, NSO
State Clearinghouse, Office of the Governor
The Wilderness Society, Washington, D.C.
The Sierra Club, Toiyabe Chapter
The Nevada Outdoor Recreation Association, Nevada Chapter

VI. INTENSITY OF PUBLIC INTEREST

Public interest is high and Congress has passed PL 95-278 authorizing the land sale through R&PP to the University of Nevada.

VII. PARTICIPATING STAFF

Dan L. Naegle, Realty Specialist, Battle Mountain District
Peter F. Humm, Realty Specialist, Shoshone/Eureka R.A.
Patrick Welch, Archaeologist, Shoshone/Eureka R.A.
Kelly M. Madigan, Environmental Coordinator

VIII. SUMMARY OF ENVIRONMENTAL IMPACTS

The residual impacts would be that the livestock grazing privileges lost from the subject lands will be taken from the grazing licence of the University of Nevada. Particulate matter will be suspended as a result of all the proposed actions after the land is sold. Existing vegetation will be either altered or destroyed due to fencing, seeding, chemical and fire treatments. There may be some alteration in the watershed soil holding capacities of the vegetation due to the fire treatments. The prevailing winds may cause chemicals to drift from area to area during the spraying treatments. Water developments will result in livestock trampling and overuse. Electrical charged fencing may cause some problems with raptors. The fence line scars will be visible until the vegetation has a chance to reestablish. Ground water discharge and water table levels may be effected by the irrigation sprinkling systems. The seedings and bottom land revegetation will help establish livestock forage and wildlife habitat by providing increased food production and cover.

Since the land will be used for range research, it is conceivable that the public can also benefit through improved ranching techniques and range management practices. The ultimate productivity and valve of the land will increase with this sale.

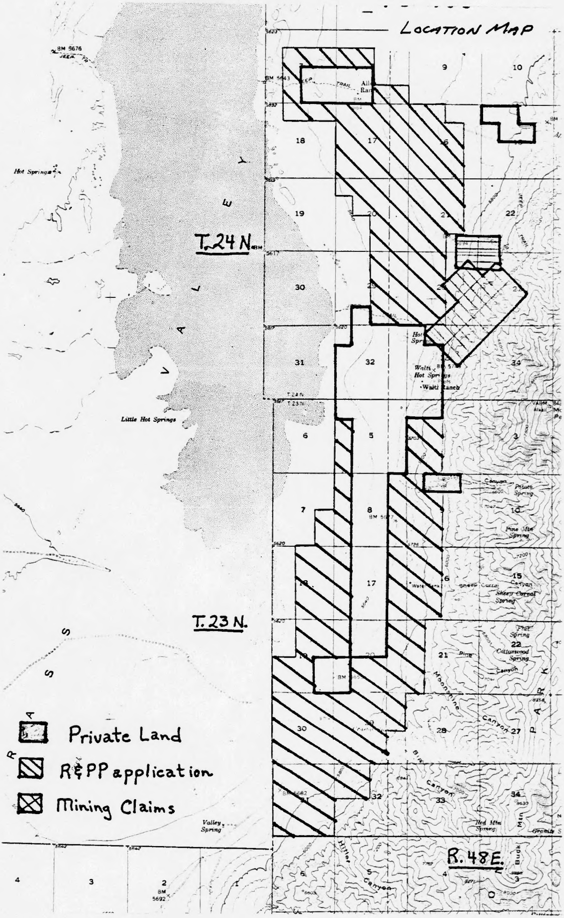
The BLM should reserve a floating easement on the land east of Highway 41 for future use. The only present resources that will be lost with the sale of the subject lands will be the grazing privileges attached to them.

Public interest is high as Congress has authorized by Public Law 95-278, the sale of the land through R&PP to the University of Nevada.

IX. SIGNATURES

Prepared by:_____ Date:_____
Kelly M. Madigan
Environmental Coordinator

Reviewed by:_____ Date:_____
Colin P. Christensen
Area Manager
Shoshone/Eureka Resource Area



LOCATION MAP
T.24N.
T.23N.
R.48E.
VALLEY
Hot Springs
Little Hot Springs
Walti Hot Springs
Walti Ranch
Valley Spring
Private Land
R&PP application
Mining Claims

Appendix # 1

PLAN OF DEVELOPMENT

I. Fencing

1) Plot fencing - Plots will be fenced on a temporary basis as appropriate. These will be discussed later.

2) Management fencing - Fencing is an expensive item, therefore, it will be kept to a minimum. A boundary fence is not anticipated. Transfer lands in township 24 north, range 48 east require no additional fencing for livestock management. Lands in township 23 north, range 48 east have been historically abused, therefore, management will be enhanced with certain fences. These fences are marked in red on the attached map (Attachment 1). These fences are listed as 1, 2 and 3.

1. A fence will be built on an east west line originating at the south east corner of the 160 acre experimental field. This fence will follow the section line between sections 20 and 29, and 21 and 28, continuing east with a dead end at the eastern boundary of the transfer. This fence will effectively create a 1700 acre bench land field consisting of all transfer land north of this fence, east of present deeded lands and south of our present boundary fence in section 4. A fence on the eastern boundary is not anticipated as the Simpson Park Mountains will act as a sufficient natural boundary. This fence will be one mile long.

2. Fence #2 will originate at the south east corner of the 160 acre experimental field, follow a south west line immediately to the west of the main Grass Valley road until it intersects the west transfer line (west side section 31). At this point it will follow section 31 south and east, terminating at the south east corner of section 31. This fence will again create a three-sided field of approximately 1600 acres with the Simpson Park Mountains making a natural boundary to the east. This fence will be approximately 3-3/4 miles long.

3. Fence #3 will start at the intersection of the Grass Valley Road and the west transfer boundary continue north on the west side of sections 30 and 19. It will progress east at the mid-point of section 19 and terminate at the north west corner of the 160 acre experimental field. This will result in a fully fenced field of approximately 1000 acres. The existing drift fence originating at the north west corner of the 160 acre experimental field and going westward to the lake bed will be removed. Fence #3 will be approximately 2-1/4 miles long.

These three fences will total 7 miles in length. They will require two cattle guards on the Grass Valley road. These will be constructed to meet the specifications of Lander County. Fence construction will be 4 wire, electric with charging occurring only during livestock use. This will result in minimum wildlife interference during winter. Additionally, wildlife access to the Simpson Park Mountains will not be hindered.

II. Range Forage Research

Range research efforts will be intensified on degraded sagebrush communities existing on alluvial fans. Immediate research areas will lie in sections 8, 9, 16, 17, 21, 22, 29 and 30 township 23 north, range 48 east. Eleven plots of approximately 40 acres each have been located and flagged. Their exact location appears on the attached map (Attachment 2). Nine plots will actually be used with three being subjected to forage manipulation with the 2, 4-D/atrazine treatment, 3 being subjected to fire and 3 remaining as checks. Within 2, 4-D/atrazine treatments, one field will be early grazed, one continuous grazed, and one handled as a rest rotation field. All three fields would be reseeded with crested wheat. In fire treatments, one would be rehabitated with crested wheat, one would receive no treatment, while the third would receive grazing management. Check fields would receive no grazing, continuous grazing rest rotation. Consequently, 2, 4-D/atrazine would be applied to 120 acres, crested wheat seeded to 160 acres and 120 acres burned.

Range forage research will also be applied to bottom lands primarily covered by greaswood/rabbitbrush. These lands will not be subjected to revegetation but will be managed to enhance the return of saltgrass and Great Basin Wildrye. Treatments will probably include combinations of brush removal followed by protection from grazing and spring burning. Plots or treatments have not been designated. This research will be conducted in section 30, township 23 north, range 48 east and sections 17 and 20, township 24 north, range 48 east.

Plots will be fenced using temporary electrical fence. Upon completion of research, fencing will be removed.

III. Range Forage Improvement

Specific sites for forage improvement will be developed. However, these developments will be based upon research results. Consequently, developments of this material generally will occur after a nimimum of 5 years or longer.

One site has been selected for improvement during the second year (approximately) after transfer. Approximately 500 acres of the old Keystone seeding exist on transfer lands. This portion of the Keystone seeding has degraded during previous years. Stand density has decreased with extensive invasion of sagebrush occurring. This stand will be revegetated to provide an adequate area of crested wheat for grazing studies. This area occupies a strip of land in sections 16, 21 and 28, township 24 north, range 48 east. It is outlined in yellow on Attachment 1.

IV. Livestock Water Development

Transfer lands, as they presently exist, are adequately watered with the exception of the northern portion, or those lands lying between the Walti and Allen properties. However, with more intensive management and smaller fields, need will exist to develop additional water. Approximately six sites have been suggested as possible areas for stock water development. These are marked in black on Attachment 1. Development of stock water offers unique opportunities to study alternative sources of energy as well as possible alternative uses of surplus water for such functions as wildlife habitat.

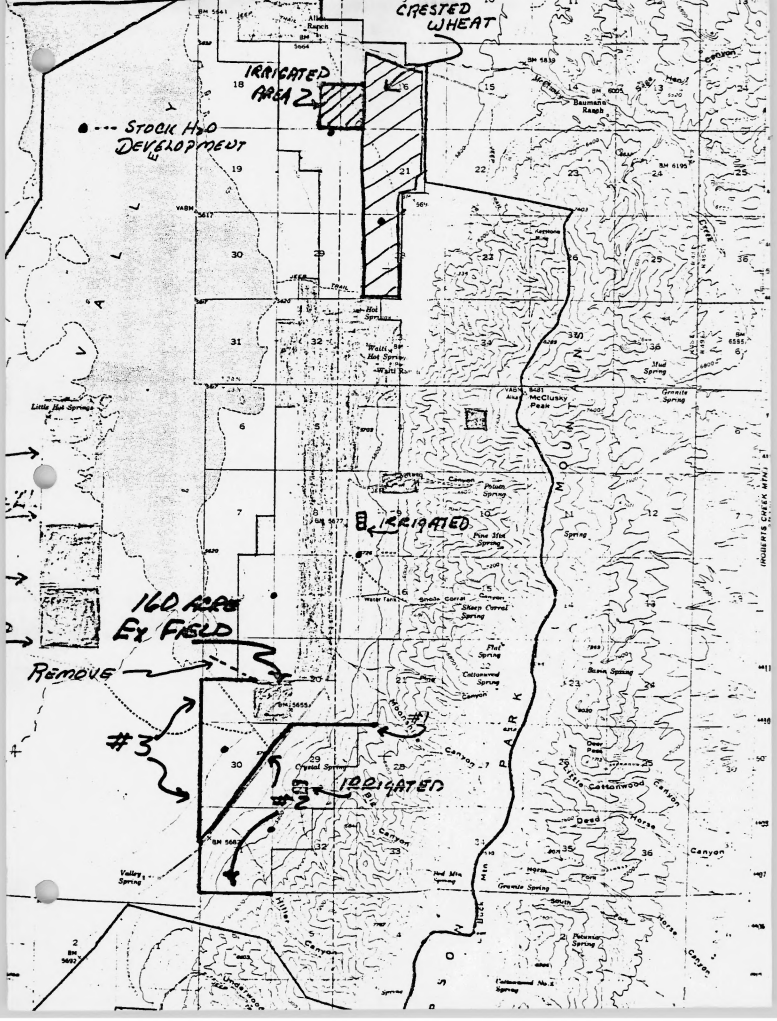
V. Irrigation Water Development

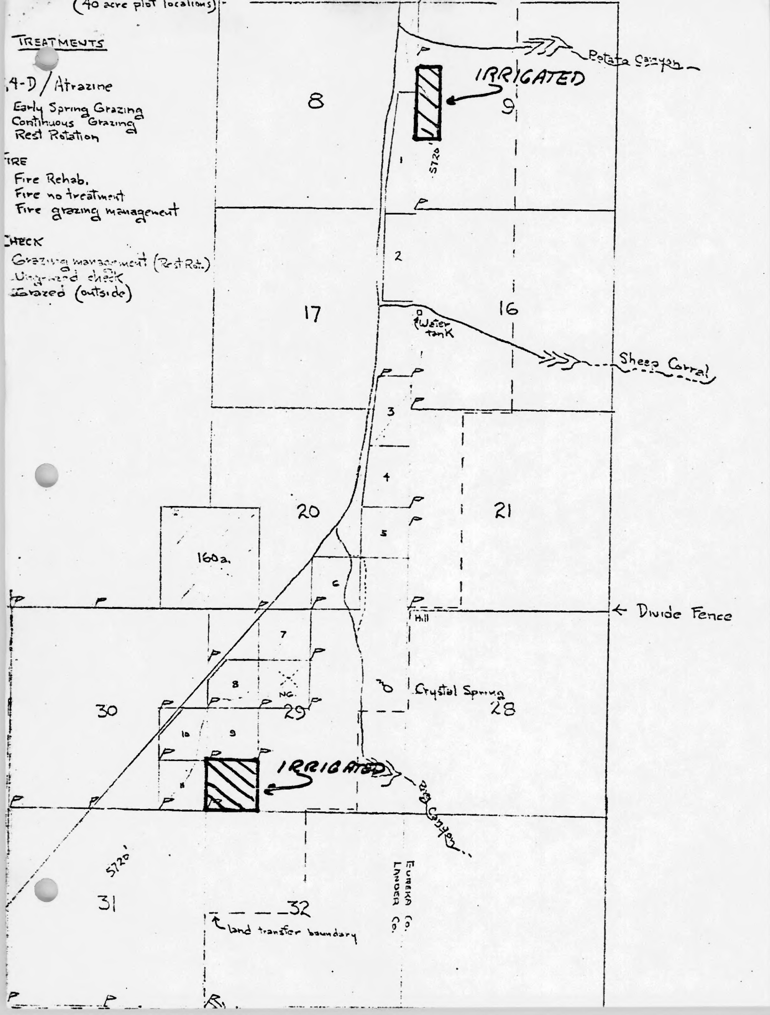
Irrigated forages are essential to offset the use of range forage. As range forage production increases, need will exist at the Gund Research and Demonstration Ranch to improve the irrigated forage base. Unfortunately, this is a costly area in both development and continuing production (fossil fuel). Inadequate economic information exists on the establishment of irrigation projects from a raw beginning to fully assess how such developments may fit into western agricultural developments. Therefore, a development utilizing a large well and circular sprinkler system is being considered. There are several possible locations but the most promising exists in section 17, township 24 north, range 48 east. This area is marked in green on Attachment 1. Complete economic assessment of this type of development would offer valuable data in overall land management.

Additionally, two sites of approximately 20-30 acres exist where sufficient spring runoff water exists to create short season forage production. These exist in sections 9 and 29 of township 23 north and range 48 east. They are marked in green on both Attachments 1 and 2. These would be based on surplus waters from Potato Canyon and combination of waters from No Name and Hellar Canyons. Development of these irrigated areas is not anticipated during the first two years. Economic assessment of these developments would offer comparisons to major developments.

VI. Other Development

Transfer lands offer many unique opportunities to investigate developmental procedures and their effect upon not only natural resources but ultimately their effect upon the productiveness of the land. These developments will be the result of research findings during the coming years. However, by the very nature of research, the extent direction of these developments would be difficult to predict. Fortunately, the Gund Research and Demonstration Ranch does offer the unique opportunity to study the impact before the technique is applied to the overall land mass.


CRESTED WHEAT
IRRIGATED AREA 2
STOCK H2O DEVELOPMENT
IRRIGATED
160 ACRS Ex FIELD
REMOVE
#3
#2
IRRIGATED
MOUNTAIN
PARK
VALLEY


(40 acre plot locations)
TREATMENTS
,4-D / Atrazine
Early Spring Grazing
Continuous Grazing
Rest Rotation
FIRE
Fire Rehab.
Fire no treatment
Fire grazing management
CHECK
Grazing management (Rest Rot.)
Ungrazed check
Grazed (outside)
Potato Canyon
IRRIGATED
8
9
5720'
1
2
17
16
Water tank
Sheep Corral
3
4
20
21
5
160a.
6
Divide Fence
Hill
7
8
NC.
Crystal Spring
30
29
28
10
9
IRRIGATED
Canyon
5720'
31
32
land transfer boundary
EUREKA Co.
LANDER Co.