

6/20/96



United States Department of the Interior



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M
[Handwritten checkmark]

IN REPLY REFER TO:
4700
(NV-030)

JUN 20 1996

Dear Interested Party:

Enclosed for your review is a copy of the revised Garfield Flat Allotment Evaluation. The original allotment evaluation was sent to you for review in August 1992. The Multiple Use Decision was delayed by a population dynamics study of wild horses initiated by the University of Nevada-Reno in the same year. Results of this study have not been published but data gathering is complete which has allowed this office to move forward with management of this allotment.

The allotment is being re-evaluated incorporating new data and your previous comments. All comments should be addressed to this office prior to July 24, 1996.

Sincerely yours,

[Handwritten signature: J. Matthiessen]

John Matthiessen
Assistant District Manager
Renewable Resources

1 Enclosure: Garfield Flat Allotment Evaluation



COMMISSION FOR THE
PRESERVATION OF WILD HORSES

255 W. Moana Lane

Suite 207A

Reno, Nevada 89509

(702) 688-2626

July 8, 1996

Ms. Julie Butler
Nevada State Clearinghouse
Blasdel Bldg., Rm. 200
Carson City, Nevada 89706

Subject: Garfield Flat - Garfield HMA - SAI# 96300190

Dear Ms. Butler:

Thank you for consulting the Commission for the Preservation of Wild Horses concerning the allotment evaluation for Garfield Flat Allotment. We have the following comments:

Page 8, Allotment Management Plan

We are surprised that the Walker Resource Area did not adopt allowable use levels of the land use plan or Nevada Range Handbook for key areas as objectives.

Page 10, Levels of Utilization

In all efforts to avoid misunderstanding, we are unaware of any decision to apply "heavy use" prescriptions to key species within any land use planning documents by either the Forest Service or Bureau of Land Management throughout Nevada.

Page 13, Wild Horses

It would appear that summer foal crops may not survive to recruit the population. By the mere numbers of horses observed, the recruitment rate of 17 percent may be reasonable. Foal survival may be relative to annual precipitation data presented in the document.

Page 20, Conclusions

It is obvious that the author has been misunderstood in the past. However, prescribed "severe and heavy" use of key species to alter the successional stages of vegetation are not common practices by range conservationists in Nevada. It would be reasonable to expect

Ms. Julie Butler
July 8, 1996
Page 2

some data or trend studies to support this approach to range management.

We agree that there is adequate forage throughout the allotment to support present stocking rates and wild horses.

We agree that phenological studies find the critical growth period for key perennial grasses may start in March each year. It is difficult to understand the revised treatments allow livestock turnout in May 1995 that is contrary to studies and the existing permit.

Page 28, Technical Recommendations

We cannot agree to the determination of an appropriate management level for this herd by discretionary application of allotment specific objectives. In the appendix, the District uses 55 and 27.5 percent utilization limits as desired objectives for horses; whereas, the allotment evaluation establishes a range of 60 to 70 percent range for livestock.

We also recognize that the entire Garfield Wild Horse Herd is dependent upon private lands and waters. This herd's fate is dependent upon the present and future owners of these lands. Long term management is uncertain and the herd area is obviously unsuitable for federal management. While we would embrace an agreement or conservation easement to sustain this herd, it may be impractical to expend public funds on a herd that could be legally abolished by any change in land ownership.

In summary, we would appreciate notification of the affected ^T,]. As budget and time will permit, it is important that other affected interests are aware of the Commission's concerns and issues. We would like to prevent any misunderstandings regarding the Commission's charge to assure proper management of Nevada's natural resources.

Please send any future correspondence to our new address at 1105 Terminal Way, Suite 209, Reno, Nevada 89502.

Sincerely,



CATHERINE BARCOMB
Executive Director

The Bureau is concerned regarding the nonexistence of reliable waters on public land. The wild horse specialist and the district engineer inventoried the HMA. Rattlesnake Well #2 is a hand dug well located in the southwestern portion of the HMA. This source is inadequate. Water production potential is minimal. The other sources are small seeps located between this well and Garfield Spring. The potential of these sources do not warrant development. No other satisfactory sites for the development of additional waters was found that would enhance the management of horse within the HMA.

An agreement is being negotiated between the Bureau and the permittee that will ensure access to water is provided for wild horses. Without the cooperation of the permittee, given that no other water is available, the AML for horses could be zero (0).

In order to effectively manage the herd and assure that no one area is being adversely affected, it may become necessary to control the number of animals in different portions of the HMA where localized damage is occurring. This will require removal of animals on an as needed basis determined through the monitoring process. In areas where both livestock and wild horses are having an adverse impact, the number of livestock and the amount of time that livestock are in the area will be controlled.

It is recommended that the Appropriate Management Level will be 125 wild horses. It is also recommended that wild horses numbers be managed in a range of no less than 83 and no more than 125 . This is based upon a three year gather cycle and on a recruitment rate of 15% per year. This Appropriate Management Level relies on the availability of water controlled by the permittee.

C. Threatened and Endangered/Section 7 Consultation

Through the original scoping process (1992), it was brought to the attention of the Bureau that the Sodaville milkvetch (*Astragalus lentiginosus sesquemetralis*) was proposed to be listed as threatened under section 4 of the Endangered Species Act of 1973, as amended. It was stated that if livestock within the allotment have the potential to affect this population, informal consultation should be pursued. The conference process could be used to ensure that the proposed action would not violate section 7 (a) (2) of the Act if the species should become listed prior to completion of the action.

On September 14, 1992 a field trip was made to the site. Correspondence from the Fish and Wildlife Service, dated September 25, 1992 stated that "The onsite inspection revealed that little or no livestock use is occurring on the private lands. We therefore concur with your determination that the current livestock system on the Garfield Flat Allotment is not adversely affecting the Sodaville milkvetch."

Bureau personnel will continue to monitor the population of Sodaville milkvetch.

D. Proposed Range Improvements

Potential projects (Refer to Appendix I, Map No. 18) listed in the 1992 evaluation and which remain valid are as follows:

An extension to the Pepper Springs Pipeline in the Garfield pasture would begin at approximately T 7 N, R 32 E, Section 22, tentatively passing through portions of sections 16, 17, and 21 and approximately ending in T 7 N, R 32 E, Section 18. A trough(s) will be installed at the end of the pipeline. Since this is considered a permanent improvement, it will be authorized under a Cooperative Agreement.

Additional water developments are needed in the north end of Whiskey pasture. Locations will be explored on an as needed basis. It may be necessary to haul water into the area in order to more fully utilize the pasture in the interim.

A right-of-way fence on the remaining unfenced portion of U.S. 95 that borders of the allotment should be constructed. This would be a Nevada Division of Transportation project. This will allow the permittee to use a large portion of the allotment that is currently unavailable because of concerns for public safety. Once the fence is constructed, additional water hauling sites or reservoirs can be considered to distribute livestock throughout these areas.

E. Monitoring Studies

In the original evaluation (1992), the schedules for allotment wide use pattern mapping, key area utilization studies, actual use data, trend (frequency and photo trend plots), condition, and climate were outlined on a time schedule. This data was and continues to be collected as per Bureau Technical References and the Nevada Rangeland Monitoring Handbook.

It is recommended that the utilization for grasses be adjusted from 70% to 60% for all key areas.

F. Evaluation

This reevaluation is based upon data collected over the past three years. As stated in the 1992 evaluation, upon completion of the 2001/2002 grazing season, the grazing treatments and schedules will be evaluated.

G. Boundary Change

The area that the Bureau of Land Management gained in the exchange with U.S. Forest Service has not officially been incorporated into the allotment (Refer to Appendix I, Map No. 19). It has not been evaluated in regards to a livestock carrying capacity. The permittee grazed livestock in the area this year (1996). A carrying capacity will be developed, based upon five years of actual use data analyzed in conjunction with use pattern mapping data.

It is recommended that this area be managed in conjunction with the Rattlesnake Pasture for the next five years. This will allow adequate time in which to analyze the actual use and use pattern mapping data in order to determine a reasonable carrying

capacity for this area. In turn, upon conclusion of this study, adjustments will be made to the grazing preference of the allotment.

H. Term Permit

The terms and conditions discussed in this document will be incorporated into the Term Permit (10 Year). Upon approval by the Secretary of Interior of the RAC's standards and guidelines, those applicable standards and guidelines shall automatically be made part of the Term Permit.

It is recommended that the term permit, with all applicable standards and guidelines, be made a part of the subsequent Multiple Use Decision.

2: garfield

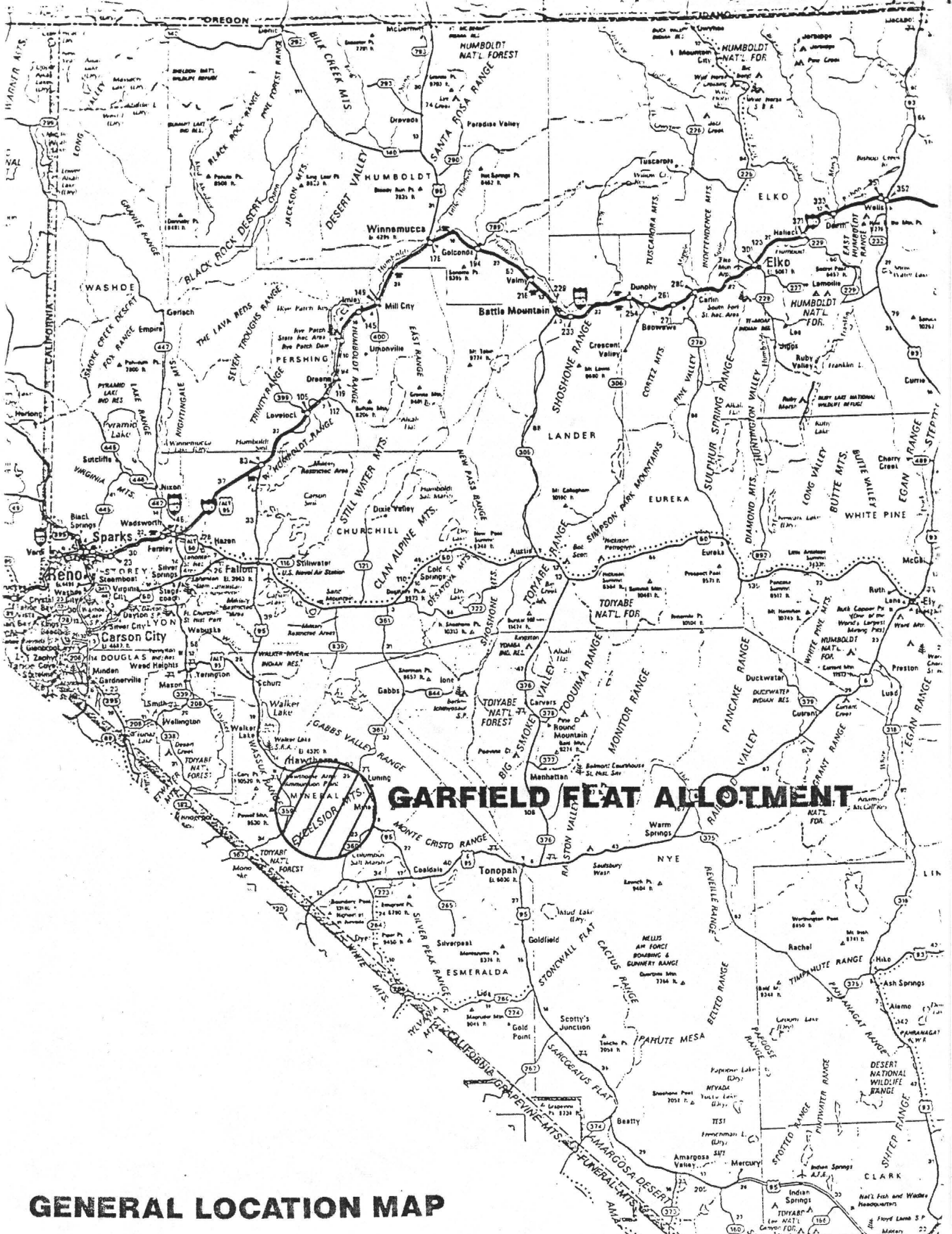
UNITED STATES
DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
CARSON CITY DISTRICT OFFICE
1535 HOT SPRINGS ROAD, SUITE 300
CARSON CITY, NEVEADA 89706



GARFIELD FLAT ALLOTMENT EVALUATION

JUNE, 1996



GARFIELD FLAT ALLOTMENT

GENERAL LOCATION MAP

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MAPS
RANGE IMPROVEMENTS
PHOTO PLOT INTERPRETATION
POTENTIAL STOCKING LEVEL CALCULATIONS

I. INTRODUCTION

In June, 1992, the Bureau of Land Management (BLM) issued its *Strategic Plan for Management of Wild Horses and Burros on Public Lands*. One of the objectives was to establish initial Appropriate Management Levels (AMLs) for all Herd Management Areas (HMA's). Garfield Flat allotment was initially evaluated in 1992. The document was sent out for public review. A study of the HMA was initiated by the University of Nevada-Reno in this same year. All of the horses were captured, sexed, aged, freeze branded, and then released back into the HMA. Rather than continue with issuing a Proposed and a Final Multiple Use Decision, the Bureau allowed additional time for information gathering on the herd. To establish an AML for wild horses in the Garfield HMA, the allotment is being re-evaluated incorporating new data.

Specifically, the purpose of the allotment evaluation is to determine if current grazing practices are consistent with attainment of Land Use Plan (LUP) and allotment specific objectives. If current grazing practices are not consistent with attainment of these objectives, appropriate changes in management will be identified and implemented. The allotment is classified as category "I¹". The evaluation period is from 1986 to 1995.

II. INITIAL STOCKING LEVEL

A. Livestock Use

1. Active Preference

| ACTIVE PREFERENCE | PERIOD OF USE | PERCENT PUBLIC LAND |
|-------------------|----------------|---------------------|
| 3516 | 11/01 TO 04/15 | 88 |

2. Other Information

The allotment is situated in Mineral County approximately ten miles south of Hawthorne, Nevada (Refer to Appendix I, Map No. 1).

The small communities of Mina and Luning are located along U.S. 95 which is the eastern and northern boundary of the allotment, in conjunction with the Hawthorne Army Depot. The southern boundary is formed by the Excelsior Mountains. To the west, State Route 31 forms the boundary between public land and the Toiyabe National Forest.

The base ranch, known as Sweetwater, is located approximately 25 miles south of Wellington, Nevada. The normal operation for public lands is to run cattle from November 1 through April 15. The cattle are then taken to private meadows at Sweetwater Ranch and Bridgeport, California. Grazing preference is also held on Forest Service administered lands. This use occurs until October when the cycle repeats itself.

¹ "Improve" - Improve current unsatisfactory condition, while protecting existing resources.

On May 6, 1959 active preference was adjudicated. Total range use of 4400 AUMs was identified (800 cattle from 11/1 to 4/15). The active preference established at that time was 4242 AUMs.

On June 16, 1988, the permittee was informed that 8,910 acres of land within the allotment were identified for transfer to private ownership (Aerojet Corp.) in accordance with the Nevada-Florida Land Exchange Authorization Act of 1988. Estimated grazing capacity for these lands was 420 AUMs. On July 1, 1988, the active preference was adjusted to 3822 AUMs.

In October of 1988, the National Forest and Public Lands of Nevada Enhancement Act mandated transfer of 12,240 acres of land administered by the Carson City District (BLM) to the Toiyabe National Forest. The estimated grazing capacity was 306 AUMs. On April 26, 1989, this transfer became effective and the grazing preference was adjusted to the current grazing preference of 3516 AUMs on the public lands. Also at this time, approximately 5,852 acres of land was transferred from the Forest Service to the Bureau. The grazing capacity of these lands has never been determined, therefore no adjustments to the allotment's grazing preference have been made.

Acreage Statistics for the allotment are:

| | |
|------------------------------|---------------|
| Unfenced Private Land | 2,564 acres |
| Unfenced Aerojet Land | 8,910 acres* |
| Fenced Farm Land | 1,200 acres** |
| BLM Public Land | 218,841 acres |
| Unfenced Forest Service Land | 12,240 acres |

Total 243,755 acres

*This land is no longer controlled by Sweetwater Ranch, therefore the percent public land rating has been adjusted from 80% to 88%. **The fenced farm land was purchased in 1994 and is now owned by a Mr. Godi.

A list of existing range improvements located within the allotment can be found in Appendix II. Locations are shown on Map No. 17, Appendix I.

B. Wild Horse Use

The Garfield Flat Herd Management Area (HMA) is approximately 141,800 acres and comprises fifty-eight percent (58%) of the allotments total acreage (Refer to Appendix I, Map No. 2). The earliest population census was conducted in 1973 when 184 horses were counted.

The Belleville allotment, which lies on Garfield Flat's southern boundary, contains 15% of the HMA. The Walker Resource Area Rangeland Program Summary (1989) initially provided for approximately 648 AUMs of wild horse forage in the Candelaria allotment (renamed the Belleville allotment in 1992). This was a prorated demand based on an

estimate of 15% of the HMA acreage being in the Candelaria allotment. These AUMs were not based on monitoring of the resource data. Aerial census and field observations reveal that wild horses do not use this area, therefore all AUMs identified for wild horses are located in the Garfield Flat allotment.

C. Wildlife Use

1. Mule Deer (*Odocoileus hemionus*).

a. Existing Numbers

The LUP recognized mule deer as one of the wildlife species using the Garfield Flat Allotment. The number of resident mule deer is relatively small as shown by the figures below. The number of deer in the area increases during the winter months, with many of these animals using the allotment as transition area or as a corridor to preferred winter habitats (i.e., foothills on the east side of the Wassuk Range). Though the Division of Wildlife recognized that mule deer utilize the area around the Garfield Flat Allotment, numbers are not large enough to warrant a regular monitoring effort. Instead the Division focuses its deer monitoring efforts in areas of greater concentration.

| <u>Mountain Range</u> | <u>Season of Use</u> | | <u>Existing Demand(1)</u> | | <u>Reasonable Numbers(2)</u> | |
|-----------------------|----------------------|-----------------|---------------------------|-------------|------------------------------|-------------|
| | <u>Dates</u> | <u>(months)</u> | <u>Nos.</u> | <u>AUMs</u> | <u>Nos.</u> | <u>AUMs</u> |
| Excelsior Mtns. | 1/15 to 5/15 | 4 | 308 | 308 | 420 | 420 |
| | Yearlong | 12 | 31 | 93 | 44 | 132 |

1. Based on a three-year average calculated using the Selleck-Hart formula, then prorated to allotment level.
2. Values are prorated based on percent BLM acres.

b. Key and Crucial Areas

A small area along the southern boundary of the allotment is identified as key deer winter range (Refer to Appendix I, Map No. 3).

Please note that the key deer winter range on the southeastern foothills of the Wassuk Range is administered by the U.S. Forest Service, Bridgeport Ranger District, Bridgeport, California. The jurisdictional change is related to the previously mentioned National Forest and Public Lands of Nevada Enhancement Act.

2. Other Key or Crucial Management Areas

a. Aquatic Habitats

Not present.

b. Riparian Habitats

Not present.

3. Wildlife - General

Common furbearing species include coyotes (*Canis latrans*), bobcats (*Felis rufus*), mountain lions (*Felis concolor*), badgers (*Taxidea taxus*), and kit fox (*Vulpes macrotis*).

Upland game species include mountain cottontail (*Sylvilagus nuttallii*), desert cottontail (*Sylvilagus audubonii*), mourning dove (*Zenaidura macroura*), California quail (*Lophortyx californicus*), and chukar (*Alectoris chukar*).

Raptors include the prairie falcon (*Falco mexicanus*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), and the American kestrel (*Falco sparverius*) to name a few.

Also present are a host of small mammals, birds and reptiles.

Occasional sightings of pronghorn antelope (*Antilocapra americana*) are made in the vicinity of Sodaville and Mina, Nevada.

III. ALLOTMENT PROFILE

A. Description

1. Topography

The topography varies in elevation from 5600 to 8600 feet. It can be characterized as rolling mountainous country with numerous open valleys. Soda Springs Valley drains to the north and east, Whiskey and Rattlesnake flats drain to Walker Lake with the remainder of the areas draining into Garfield Flat.

2. Soils

The soils are typical of the Western Great Basin and exhibit wide ranges in depth, drainage class, percent surficial and subsurface rock fragments, pH, and other diagnostic soil properties. Accelerated erosion, where present, is mostly confined to small areas adjacent to seeps/springs, shallow/lithic soils and steep slopes.

3. Water Resources

For the following sites, functionality² ratings have been completed that indicate trend and water availability (Refer to Appendix I, Map No. 4).

| Name | Location | Rating/Surface Water Present |
|----------------|----------------------|---------------------------------------|
| Pepper Spring | T5N,R34E,Sec.06,NENW | Functional-Static Trend/Yes |
| Garfield Spg. | T6N,R33E,Sec.35,SWNE | Functional-Static Trend/Yes |
| Whiskey Spring | T6N,R31E,Sec.20,NENE | Functional at Risk-Downward Trend/Yes |
| Summit Spring | T5N,R31E,Sec.24,SEnw | Functional-Static Trend/Yes |

Water is a major limiting factor. Pepper Spring, Whiskey Spring, and Garfield Spring are all located on private property with water rights controlled by Sweetwater Ranch. The Pamlico pipeline, which originates at Pepper Spring, waters a majority of the Garfield Pasture. Another pipeline that originates at Garfield Spring supplies water to the large area in and around Douglas Flat. Whiskey Spring and the Rattlesnake pipeline water the majority of Whiskey Pasture. Summit Spring is located in the southwestern portion of Rattlesnake Pasture, in an area acquired by the BLM as a result of the Enhancement Act. The spring is developed with a sizable concrete trough. The balance of the allotments acreage, which is significant, does not contain any permanent water.

4. Vegetation

The vegetation in the allotment is quite varied due to the elevational extremes. The main vegetation zones in the area are salt-desert shrub and sagebrush-bunchgrass associations.

Big sagebrush (*Artemisia tridentata*), low sagebrush (*Artemisia arbuscula*), pinyon-juniper woodlands (*Pinus sp. and Juniperus sp.*), shadscale (*Atriplex confertifolia*), and greasewood (*Sarcobatus vermiculatus*) are the significant vegetation types.

Other species associated with these vegetation types are Sandberg bluegrass (*Poa secunda*), galleta grass (*Hilaria jamesii*), needlegrasses (*Stipa spp.*), squirreltail (*Sitanion hystrix*), sand dropseed (*Sporobolus cryptandrus*), Indian ricegrass (*Oryzopsis hymenoides*), bud sagebrush (*Artemisia spinescens*), fourwing saltbush (*Atriplex confertifolia*), and

² Lentic riparian-wetland areas are functioning properly when adequate vegetation, landform, or debris is present to: 1) dissipate energies associated with wind action, wave action, and overland flow from adjacent sites, thereby reducing erosion and improving water quality; 2) filter sediment and aid floodplain development; 3) improve flood-water retention and ground-water recharge; 4) develop root masses that stabilize islands and shoreline features against cutting action; 5) restrict water percolation; 6) develop diverse ponding characteristics to provide the habitat and water depth, duration, and temperature necessary for fish production, waterbird breeding, and other uses; and 7) support greater biodiversity.

winterfat (*Eurotia lanata*). Forbs are primarily composed of various species of phlox (*Phlox sp.*), globemallow (*Sphaeralcea ambigua*), rose pussytoes (*Antennaria rosea*), and buckwheats (*Eriogonum sp.*).

5. Key Species

a. Uplands/ KEY AREAS (Refer to Appendix I, Map No. 5)

G001 (Loamy 8-10" P.Z., **029X006N**) is located in the Whiskey Pasture. The key species are Indian ricegrass, desert needlegrass (*Stipa speciosa*), and squirreltail. Based upon the Soil Conservation Services' site write-up guidelines (1989), the plant community is dominated by Wyoming big sagebrush, Indian ricegrass and needleandthread. Potential vegetative composition is about 50% grasses, 5% forbs and 45% shrubs. The data from 1984 showed the site to have 21% grasses, 0% forbs, and 79% shrubs/trees. The following figures reflect the percent air-dry weight of each plant species that should be in the Potential Natural Community (PNC). The guideline says to not allow more than 3% of squirreltail in the total:

ORHY/15-25; STCO4/10-20; ARTRW/25-35; ATCA2/2- 5

G002 (Sandy Loam 8 -12" P.Z., **029X049N**) is located in the Whiskey Pasture. The key species are winterfat, Indian ricegrass, and needleandthread (*Stipa comata*). SCS write-ups indicate that the plant community is dominated by Wyoming big sagebrush, Indian ricegrass and desert needlegrass. Other important species on this site are galleta, bud sagebrush and winterfat. Potential vegetative composition is about 50% grasses, 5% forbs and 45% shrubs. Data collected in 1984 shows the vegetative composition to have been 75% grasses, 0% forbs, and 25% shrubs. The following figures reflect the percent air-dry weight of each plant species that should be in the PNC:

ORHY/10-25; STSP3/10-20; ARTRW/25-30; GRSP/5-10; EULA5/2 - 8

G003 (Silty 5 - 8" P.Z., **029X020N**) is located in the Garfield Pasture. The key species are Indian ricegrass, winterfat, and fourwing saltbush. SCS write-ups indicate that the plant community is dominated by winterfat. Indian ricegrass, bottlebrush squirreltail and bud sagebrush are other important species associated with this site. Potential vegetative composition is about 25% grasses, 5% forbs and 70% shrubs. Studies completed in 1984 showed composition at 55% grasses, Trace of forbs and 45% shrubs. The following figures reflect the percent air-dry weight of each plant species that should be in the PNC:

ORHY/5-15; SIHY/5-10; EULA5/60-70

G004 (Sandy 5 - 8 " P.Z., 027X009N) is located in the Garfield Pasture. The key species are Indian ricegrass, winterfat, and fourwing saltbush. SCS write-ups indicate that the plant community is dominated by Indian ricegrass and fourwing saltbush. Other important species on this site are needleandthread and winterfat. Potential natural composition is about 75% grasses, 5% forbs and 20% shrubs. Data collected in 1984 shows the vegetative composition to have been 38% grasses, a trace of forbs, and 62% grasses. The following figures reflect the percent air-dry weight of each plant species that should be in the PNC:

ORHY/50-70; STCO4/5-15; ATCA2/10-20; EULA5/2 - 8

Generally speaking, Indian ricegrass is considered the most important and abundant forage species. Winterfat and needlegrass are both found in common with ricegrass and are considered important components of the vegetative resource.

b. Riparian

Riparian vegetation is important to wildlife, wild horses, livestock and humans. Vegetation located in and around water sources are composed of coyote willow (*Salix exigua*), Pacific tree-willow (*Salix lasiandra*), baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), silver sedge (*Carex praegracilis*), wild rose (*Rosa woodsii*), tufted hairgrass (*Deschampsia caespitosa*), spikerush (*Eleocharis palustris*), Kentucky bluegrass (*Poa pratensis*), creeping wildrye (*Elymus triticoides*) and sedges (*Carex sp.*). Watercress (*Nasturtium officinale*) is also present in shady areas where pooling and/or overland flow occurs.

6. Threatened and Endangered Species

a. Vegetation

Sodaville Milkvetch (*Astragalus lentiginosus sesquemetralis*) is located on private land, adjacent to public land, in the vicinity of Sodaville, Nevada (Refer to Appendix I, Map No. 6). The plant is restricted to powdery clay saline soils adjacent to springs. This site is threatened by habitat alteration and destruction resulting from off-road vehicle activity, commercial development and associated roadside activity (U.S. Fish and Wildlife Service 1992). No other threatened, endangered, candidate³ or sensitive plant species are known to inhabit the allotment.

³ Candidate species are those plant and animal species for which the Fish and Wildlife Service has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act.

b. Wildlife

State sensitive⁴ species that may occur in the allotment are the pygmy rabbit (*Brachylagus idahoensis*) and the spotted bat (*Euderma maculatum*). While they are not listed as threatened or endangered, Bureau policy requires that they be managed so as not to increase the likelihood that the species would need listing as threatened or endangered.

The spotted bat spends daylight hours and reproduces in caves, cliffs and talus slopes. It generally feeds on flying insects in the vicinity of juniper grasslands and tall sagebrush. The pygmy rabbit reproduces and feeds in sagebrush/grasslands and riparian habitats. These habitats are present so it is possible these species occur in the allotment.

No other threatened, endangered, candidate, or sensitive animal species are known to inhabit the allotment.

B. Allotment Management Plan

The original AMP (developed in 1982) divided the allotment into three pastures. The Garfield/Douglas Flat pasture (Pasture I) was fall/winter use and could be grazed all season long (11/1 to 4/15). Whiskey Flat was divided in half (Pastures II and III). Grazing was in late winter/early spring and they were grazed in alternate years with one pasture being grazed each year.

There was no division fence separating the Whiskey Flat pastures. The *Normal Operation* was as follows:

| | |
|---------------------|--------------|
| Pasture I | 11/1 to 2/15 |
| Pastures II and III | 2/16 to 4/15 |

After eight years (1982-1990) of operating under the AMP, the following resource issues and conflicts were identified:

1. Lack of water in the northern portion of the Whiskey pasture II.
2. Consecutive years of early spring use (2/15 to 4/15) in the Whiskey pastures.
3. Key areas had been established but no specific objectives had been identified.

On October 25, 1990 the AMP was revised. Three pastures, Garfield, Whiskey, and Rattlesnake were created (Refer to Appendix A, Map No. 7). Rattlesnake is used for approximately two weeks in the months of January and February in conjunction with moves between the Garfield and Whiskey pastures. The grazing treatments and schedules are as follows:

⁴ State Sensitive species include plants and animals on which currently existing information indicates that federal listing may be warranted, but which substantial biological information to support a listing is lacking.

WHISKEY PASTURE

| TREATMENTS | 11/01 | 12/01 | 01/01 | 02/01 | 03/01 | 04/15 |
|------------|------------------------|-------|-------|----------------|-------|-------|
| A | xxxxxxxxGRAZExxxxxxxxx | | | | | |
| B | xxxxxxxxGRAZExxxxxxxxx | | | REST | | |
| C | REST | | | xxxxxGRAZExxxx | | |
| D | REST | | | xxxxxGRAZExxxx | | |

GARFIELD PASTURE

| TREATMENTS | 11/01 | 12/01 | 01/01 | 02/01 | 03/01 | 04/15 |
|------------|--------------------------------|-------|--------------------------------|-------|-------|-------|
| A | REST | | xxxxxxxxxxxxGRAZExxxxxxxxxxxxx | | | |
| B | REST | | xxxxxxxxxxxxGRAZExxxxxxxxxxxxx | | | |
| C | xxxxxxxxxxxxGRAZExxxxxxxxxxxxx | | | | REST | |
| D | xxxxxxxxxxxxGRAZExxxxxxxxxxxxx | | | | REST | |

The grazing schedule through one cycle is as follows:

| | Garfield | Whiskey |
|------|----------------|----------------|
| 1990 | 01/01 to 04/15 | 11/01 to 12/31 |
| 1991 | 01/01 to 04/15 | 11/01 to 12/31 |
| 1992 | 11/01 to 02/15 | 02/16 to 04/15 |
| 1993 | 11/01 to 02/15 | 02/16 to 04/15 |

After the fourth year the cycle repeats itself. The normal operation is to run 450 cattle from 11/1 to 4/15 (2174 AUMs). The permittee is allowed up to 563 cattle (2720 AUMs) during this period of use without prior approval of the authorized officer. Anything above this needs written approval of the authorized officer. The total active preference of 3516 AUMs is available for use. The change in the grazing system provides for two consecutive years of spring rest for each pasture.

C. Allotment Specific Objectives

The applicable objectives identified in the LUP have been combined where they were similar.

1. Short Term

a. Initially provide 3516 AUMs of forage for livestock.

b. Initially provide approximately 3720 AUMs of forage for wild horses which is prorated demand based on an estimate of 85% of the HMA located in the Garfield Flat allotment.

c. Initially provide for approximately 648 AUMs of forage for wild horses which is prorated demand based on estimate of 15% of the HMA located in the Candelaria allotment.

2. Long Term

a. Maintain or improve the condition of the public rangelands and watersheds so as to enhance productivity for all rangeland and watershed values.

b. Maintain wildlife habitat to achieve a long term goal of 420 mule deer from January 15 to May 15 and 44 mule deer yearlong (552 AUMs).

c. Continue to provide 3516 AUMs of forage for livestock use.

d. Maintain or improve wild horse habitat and free-roaming behavior (1) consistent with wildlife and livestock objectives; and (2) by protecting or enhancing the wild horse ranges.

e. Objectives for key management areas contained in the revised AMP (1990) are as follows:

| <u>KEY AREA</u> | <u>KEY SPECIES</u> | <u>FREQUENCY/TREND</u> | <u>LEVELS OF UTILIZATION</u> |
|-----------------|--------------------|--|---|
| G001 | Orhy,Sihy,Stsp | <ol style="list-style-type: none"> 1. Initiate upward trend. 2. Increase the frequency of Orhy and Stsp. 3. Maintain the frequency of Sihy. 4. Improve ecological status from mid seral to mid-late seral. | Less than or equal to 70% ⁵ on all key species. |
| G002 | Orhy,Eula,Stco | <ol style="list-style-type: none"> 1. Initiate upward trend. 2. Increase frequency of Orhy and Eula. 3. Maintain frequency of Stco. 4. Maintain ecological condition in mid to late seral. | Less than or equal to 50% on Eula and less than or equal to 70% on Orhy and Stco. |
| G003 | Eula,Atca,Orhy | <ol style="list-style-type: none"> 1. Initiate upward trend. 2. Increase frequency of Orhy. 3. Maintain frequency of Atca and Eula. 4. Maintain ecological condition in mid to late seral. | Less than or equal to 50% on Eula and Atca and less than or equal to 70% on Orhy. |

⁵This level of utilization differs from what is shown on page 23 (Degrees of Allowable Use), Nevada Rangeland Monitoring Handbook, for fall/winter use levels on perennial grasses. This table is meant to be used as a guideline only and should be tempered with local judgement on a case-by-case basis.

G004

Orhy, Atca, Eula

1. Initiate upward trend.
2. Increase the frequency of Atca and Eula.
3. Maintain the frequency of Orhy.
4. Improve the ecological condition from mid seral to early late seral.

Less than or equal to 50% on Atca and Eula and less than or equal to 70% on Orhy.

IV. MANAGEMENT EVALUATION

A. Actual Use

1. Livestock

This information is provided on a yearly basis by the permittee, to the Bureau, upon completion of the period of use.

| Period of Use | Livestock Use (AUMs) |
|-----------------------------|----------------------|
| <i>10/30/94 to 05/02/95</i> | <i>1509 AUMs</i> |
| <i>11/01/93 to 04/23/94</i> | <i>1508 AUMs</i> |
| <i>11/05/92 to 04/20/93</i> | <i>1337 AUMs</i> |
| <i>11/01/91 to 04/15/92</i> | <i>1853 AUMs</i> |
| <i>10/18/90 to 04/30/91</i> | <i>2378 AUMs</i> |
| <i>10/15/89 to 04/15/90</i> | <i>2426 AUMs</i> |
| <i>10/10/88 to 04/15/89</i> | <i>2441 AUMs</i> |
| <i>10/10/87 to 04/15/88</i> | <i>2195 AUMs</i> |
| <i>11/15/86 to 04/15/87</i> | <i>1785 AUMs</i> |

For those years where grazing occurred after April 15, this use was requested in advance by the permittee and approved by the Authorized Officer.

2. Wildlife

As noted earlier, allotment specific data is not available on mule deer numbers to allow a comparison against projected reasonable numbers. The Division of Wildlife does however gather composition data on the Mono Lake subherd, which is part of the larger Walker-Mono Interstate Herd. The subherd includes the southern portions of hunt units 202 and 206. Though changes in the population cannot readily be related to the small amount of deer habitat in the Garfield Flat Allotment, the information is worth noting.

HERD NAME: Mono Lake

| <u>Date</u> | <u>Adults</u> | <u>Fawns</u> | <u>Adults/Fawns</u> | <u>Total</u> |
|-------------|---------------|--------------|---------------------|--------------|
| 02/25/91 | 198 | 60 | 100/30.3 | 258 |
| 03/24/92 | 394 | 78 | 100/20.2 | 472 |
| 03/08/93 | 413 | 97 | 100/23.5 | 510 |
| 03/09/94 | 13 | 1 | Insufficient Sample | |
| 12/28/94 | 95 | 25 | 100/26.3 | 120 |

Note that the wide variability in the total number of animals seen is more a function of weather (i.e., wind, visibility, etc.), seasonal conditions (i.e., snow levels, early warm spring temperatures, etc.), and flight hours available, then it is an indication of actual population change. The stability of the production figures (Adult/Fawn Ratio) appears to be a better indicator of the well being of the population.

A bitterbrush transect was established in the Garfield Flat Allotment, south of Rattlesnake pasture, in March of 1994 (Refer to Appendix I, map No. 3). This utilization transect records plant age (i.e., mature, seedling, young, decadent), leader availability (i.e., all available, mostly available, etc.) and length of browsed and unbrowsed leaders. In March of 1994, the plants had a utilization level of 8% (slight). In November of 1994, the plants had a utilization level of 4% (slight). In November of 1995 and April of 1996, utilization levels of less than 5% were noted. Recorded comments indicate that there is an abundance of perennial grass, with no evidence of use by wild horses but livestock were seen in 1996. Deer sign is evident in the form of tracks and fecal matter, but suggests that deer use is light and perhaps sporadic.

The entire transect lies within a public woodcutting area that has been open for more than fifteen years. The beginning third of the transect is in an area where domestic woodcutters have been actively removing trees. The remaining two thirds of the transect transitions to increasing tree densities. As can be anticipated, bitterbrush density and vigor (more decadent plants) declines in reverse correlation to increasing tree densities. Deer sign is more evident in the beginning half of the transect.

3. Wild Horses

Aerial census data was gathered by Bureau personnel in 1988, 1989, 1990, 1991, 1993, 1994 and 1995. Results are as follows:

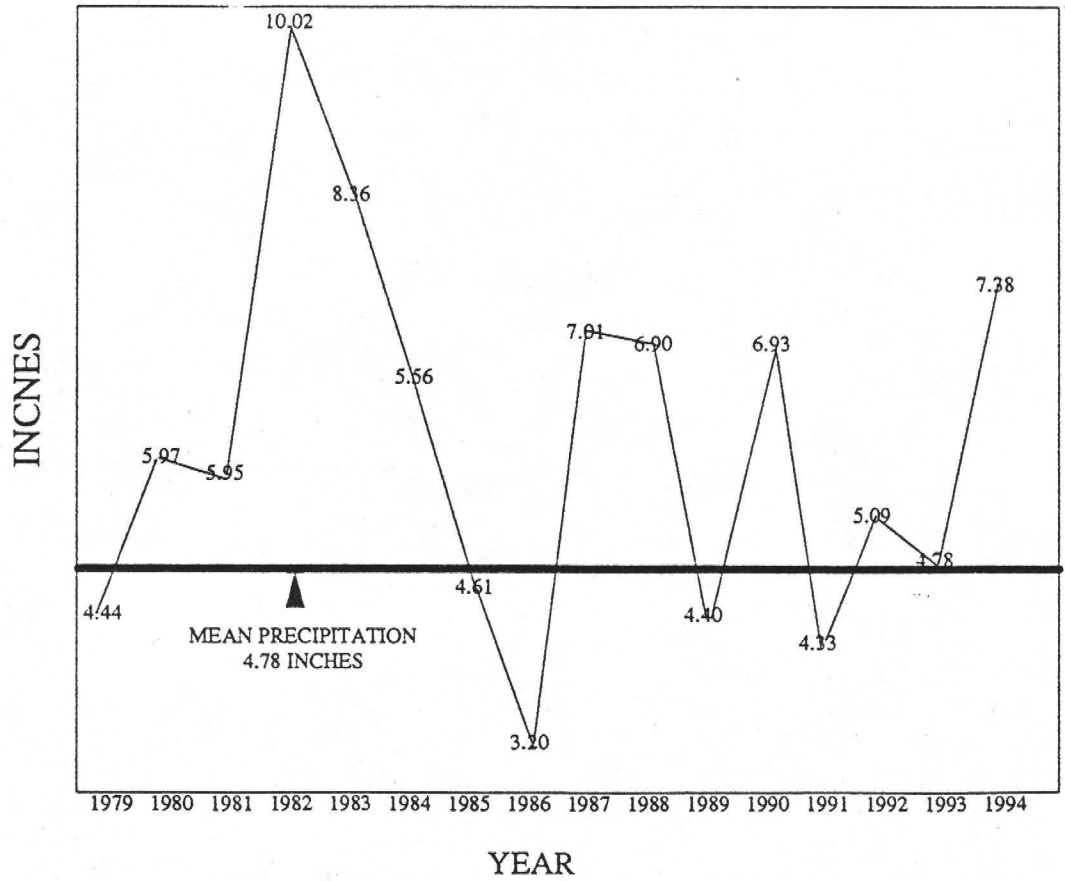
| DATE | AERIAL COUNT ADULT/FOALS | |
|----------|-----------------------------|-------------|
| 06/15/95 | 212 Adults/41 Foals | 19% — WOP |
| 08/02/94 | 185 Adults/31 Foals | 17% |
| 07/22/93 | 166 Adults/26 Foals | 16% |
| 11/21/91 | 106 Adults/10 Foals | 10% — Recnt |
| 09/11/90 | 71 Adults/10 Foals | 14% Recnt |
| 11/07/89 | 76 Adults/10 Foals | 13% |
| 11/08/88 | 92 Adults/ 7 Foals | 8% Recnt |

B. Other Information

1. Precipitation

Mina, Nevada is the closest available weather station. The mean annual precipitation is 4.78 inches. Depending upon the path, intensity, and duration of storms, mountainous areas can influence precipitation amounts. The data presented provides the reader with an idea of what may have occurred over the evaluation period. The higher elevations generally receive larger amounts of the moisture than what is recorded at the station.

ANNUAL PRECIPITATION, MINA, NEVADA



2. Use Pattern Mapping (Refer to Appendix I, Map Nos. 8 - 15)

1993/1994 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | NONE | N/A |
| Heavy | 828.36 | 1.19 |
| Moderate | 17406.11 | 24.97 |
| Light | 22054.86 | 31.64 |
| Slight | 29423.15 | 42.21 |

Totals 69712.48 100.00

1992/1993 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | NONE | N/A |
| Heavy | 9412.26 | 12.32 |
| Moderate | 42657.62 | 55.83 |
| Light | 20057.68 | 26.25 |
| Slight | 4281.55 | 5.60 |

Totals 76409.11 100.00

1991/1992 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | 1087 | 1.65 |
| Heavy | 13199 | 20.06 |
| Moderate | 26097 | 39.66 |
| Light | 15585 | 23.68 |
| Slight | 9841 | 14.95 |

Totals 65809 100.00

1990/1991 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | 1446 | 2.43 |
| Heavy | 13082 | 21.99 |
| Moderate | 26691 | 44.86 |
| Light | 4671 | 7.85 |
| Slight | 13602 | 22.86 |

Totals 59492 100.00

1989/1990 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | 2110 | 5.68 |
| Heavy | 13121 | 35.33 |
| Moderate | 19300 | 51.96 |
| Light | 0 | 0 |
| Slight | 2610 | 7.03 |

Totals 37141 100.00

1988/1989 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | 4340 | 9.87 |
| Heavy | 16420 | 37.35 |
| Moderate | 16288 | 37.05 |
| Light | 3803 | 8.65 |
| Slight | 3110 | 7.07 |

Totals 43961 100.00

1987/1988 Data

| <i>Utilization Class</i> | <i>Acres</i> | <i>Percent of Area Used</i> |
|--------------------------|--------------|-----------------------------|
| Severe | 3278 | 8.90 |
| Heavy | 11040 | 29.97 |
| Moderate | 18056 | 49.02 |
| Light | 1391 | 3.78 |
| Slight | 3069 | 8.33 |

Totals 36834 100.00

1986/1987 Data

| Utilization Class | Acres | Percent of Area Used |
|-------------------|-------|----------------------|
| Severe | 790 | 1.15 |
| Heavy | 15172 | 22.00 |
| Moderate | 29629 | 42.97 |
| Light | 1603 | 2.32 |
| Slight | 21761 | 31.56 |

Totals 68955 100.00

3. Trend

Numerous **photo trend plots** have been established, the earliest in 1970 with the balance being established in 1976 (Refer to Appendix I, Map No. 16). They are photographed on a three year schedule. Data interpretation is presented in Appendix III.

Key Area G001, located in the northwestern portion of Whiskey pasture, had frequency studies conducted in 1984, 1988, 1991 and 1994. A comparison of data follows:

| Key Species | 1984 | 1988 | 1991 | 1994 | Significant Difference | | Trend | |
|-------------|------|------|------|------|------------------------|----------------------|--------|--------|
| | | | | | 95% Confidence Level | 80% Confidence Level | 95% | 80% |
| Orhy | 31% | 19% | 22% | 28% | NO | NO | Stable | Stable |
| Sihy | 66% | 55% | 54% | 46% | YES | YES | Down | Down |
| Stsp | 21% | 17% | 18% | 22% | NO | NO | Stable | Stable |

Results of utilization⁶ studies at the key area, by utilization class are as follows.

| | Orhy | Sihy | Stsp |
|------|------|------|------|
| 1995 | 40% | 39% | 29% |
| 1994 | 58% | 60% | 44% |
| 1993 | 70% | 58% | 64% |
| 1992 | 35% | 27% | 40% |
| 1991 | 13% | 5% | 4% |
| 1990 | 48% | | |
| 1989 | 58% | | |
| 1987 | 56% | | 31% |
| 1986 | 54% | | 48% |

⁶Bluebook: The allowable use table was developed for use as a set of definitive criteria to assist in managing rangeland vegetation on a sustained yield basis. This table is meant to be used as a guideline only and should be tempered with local judgement on a case-by-case basis. Generally, utilization should not exceed the moderate range identified in the key forage plant method. The upper level for this category is 60% while still being within the range that most people identify with proper use.

Key Area G002, located in the southwestern portion of Whiskey pasture, had frequency studies conducted in 1984, 1988, 1991, and 1994. A comparison of data follows:

| Key Species | 1984 | 1988 | 1991 | 1994 | Significant Difference 95% Confidence Level | Significant Difference 80% Confidence Level | Trend | |
|-------------|------|------|------|------|--|--|--------|--------|
| | | | | | | | 95% | 80% |
| Stoc | 79% | 80% | 79% | 69% | YES | YES | Down | Down |
| Orhy | 39% | 22% | 30% | 35% | NO | NO | Stable | Stable |
| Eula | 4% | 4% | 4% | 4% | NO | NO | Stable | Stable |

Results of utilization studies at the key area, by utilization class are as follows:

| | <i>Orhy</i> | <i>Eula</i> | <i>Stco</i> |
|------|-------------|-------------|-------------|
| 1995 | 51% | 58% | 39% |
| 1994 | 53% | 60% | 42% |
| 1993 | 59% | 60% | 46% |
| 1992 | 40% | 84% | 46% |
| 1991 | 44% | 86% | 17% |
| 1990 | 76% | 70% | |
| 1989 | 11% | 64% | |
| 1987 | 10% | | 9% |
| 1986 | 64% | 44% | 64% |

Key Area G003, located in the Garfield pasture, had frequency studies conducted in 1984, 1988, 1991, and 1994. A comparison of data follows:

| Key Species | 1984 | 1988 | 1991 | 1994 | Significant Difference 95% Confidence Level | Significant Difference 80% Confidence Level | Trend | |
|-------------|------|------|------|------|--|--|--------|------|
| | | | | | | | 95% | 80% |
| Eula | 37% | 35% | 35% | 32% | NO | YES | Stable | Down |
| Atca | 26% | 31% | 18% | 14% | YES | YES | Down | Down |
| Orhy | 86% | 42% | 53% | 63% | YES | YES | Down | Down |

Results of utilization studies at the key area, by utilization class are as follows:

| | <i>Orhy</i> | <i>Eula</i> | <i>Atca</i> |
|------|-------------|-------------|-------------|
| 1995 | 29% | 60% | 60% |
| 1994 | 31% | 45% | |
| 1993 | 58% | 58% | 56% |
| 1992 | 54% | 62% | 62% |
| 1991 | 25% | 56% | |
| 1990 | 68% | 78% | |
| 1989 | 66% | 78% | |
| 1987 | 56% | 16% | |
| 1986 | 42% | 45% | 68% |

Key Area G004, located in the Garfield pasture, had frequency studies conducted in 1984, 1988, 1991, and 1994. A comparison of data follows:

| Key Species | 1984 | 1988 | 1991 | 1994 | Significant Difference | Significant Difference | Trend | |
|-------------|------|------|------|------|------------------------|------------------------|--------|------|
| | | | | | 95% Confidence Level | 80% Confidence Level | 95% | 80% |
| Orhy | 46% | 36% | 32% | 28% | YES | YES | Down | Down |
| Eula | 17% | 9% | 11% | 10% | YES | YES | Down | Down |
| Atca | 6% | 6% | 3% | 2% | NO | YES | Stable | Down |

Results of utilization studies at the key area, by utilization class are as follows:

| | <i>Orhy</i> | <i>Eula</i> | <i>Atca</i> |
|------|-------------|-------------|-------------|
| 1995 | 33% | 60% | 44% |
| 1994 | 21% | | 24% |
| 1993 | 62% | 64% | |
| 1992 | 38% | 60% | |
| 1991 | 20% | 64% | |
| 1990 | 52% | | |
| 1989 | 62% | | |
| 1987 | 61% | | |
| 1986 | 48% | 24% | |

4. Range Survey Data

An ocular reconnaissance range survey was completed in the Mina Planning Unit in 1953. A total of 234,499 acres were contained in the allotment at that time. There were 5210 AUMs available. It identified that cattle were best suited for the allotment and winter/spring was the most desirable season of use.

5. Ecological Condition

An Order 3 Soil Survey⁷ has been completed in the Mina Planning Unit which encompasses the allotment. Ecological sites were identified but no allotment wide ecological status was established. The ecological status⁸ for the key areas established in 1984 is as follows:

| | | | |
|------|----|-------------------|-----------------------|
| G001 | 39 | Mid Seral | Loamy 8-10" P.Z. |
| G002 | 61 | Late Seral | Sandy Loam 8-10" P.Z. |
| G003 | 55 | Mid to Late Seral | Silty 5-8" P.Z. |
| G004 | 51 | Mid Seral | Sandy 5-8" P.Z. |

⁷ Moderately intense survey, corresponding to the range sites.

⁸ Ecological status is defined as the present state of vegetation of a range site in relation to the potential natural community (PNC) for the site. Ecological status is use dependent. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the potential natural community. The four (4) ecological classes correspond to 0-25, 26-50, 51-75, and 76-100 percent similarity to the potential natural community and are called early seral, mid seral, late seral, and potential natural community, respectively.

6. Riparian/Fisheries Habitat

Summit Spring is located on public lands within the allotment. Functionality of riparian areas is discussed under Water Resources, Section III. A. 3. There is no fisheries habitat.

7. Wild Horse Habitat

The diversity and abundance of forage is adequate in this HMA. The availability of water is the factor which limits the amount of habitat available to wild horses. The wild horses are totally dependent upon waters that are located on private land. There are three main sources of water within the HMA in association with concentrations of wild horses. These are Whiskey Spring, Pepper Spring and the water reservoirs on the Garfield Flat playa. The majority of grazing by wild horses occurs in close proximity to these waters.

V. CONCLUSIONS

The accomplishment of the objectives shown in Section III, C. are discussed below.

A. Short Term

a. Initially provide 3516 AUMs of forage for livestock.

Livestock use over the original evaluation period (fall of 1986 to the spring of 1992) averaged 2180 AUMs. This equates to 62% of permitted use (3516 AUMs). In this same period the areas grazed equated to approximately 7% of the allotment overall. Since 1992, livestock use has averaged 1451 AUMs. This equates to 41% of permitted use. This reduction in the amount of use was the result of financial difficulties, not to a lack of forage. The average acreage used prior to 1993 was 52,032 acres compared to 73,061 since 1993. In 1993/94, 99% of the use was made in the moderate or less categories (74% light or less). In 1992/93 88% was made in the moderate or less categories (32% light or less).

trend data to support

During the 1991/92 grazing season, the heavy and severe use levels shown between Rattlesnake pasture and the western portion of Garfield pasture was prescribed as was the use in the northern portion of Whiskey pasture during the 1992/93 grazing season. These areas contained grass plants that were becoming decadent with years of old growth accumulating. The prescription was to remove as much of the old growth as possible while also breaking up the soil surface. This promotes more vigorous plant growth, assists in the establishment of new seedlings, and improves the productivity and water holding capacity of the soil.

Pool

The scheduled period of use is winter and early spring. Heavy grazing occurs when the grazing animal removes 60 to 80 percent of the yearly growth from the plant. This is the natural and normal level of use by a large grazing animal of a palatable bunchgrass plant. We should not be dismayed at this level of use: millions of years of evolution has adapted grass plants to this level of vegetative removal. Use pattern mapping is designed to show

the areas where nearly all bunchgrass plants received this normal level of use (heavy utilization areas) and the areas where very few plants received this level (or any level) of use (light or slight utilization areas). This information, in combination with information on the number of animal-months of grazing which produced the utilization pattern indicates approximately how much forage was produced by the area under study.

Harmful grazing occurs when the grazing animal returns to a previously grazed plant and consumes most of the new growth before the plant has built adequate carbohydrate reserves to maintain vigor. "Grazing Management", then, is any technique or strategy which results in avoiding, or at least reducing to a tolerable level the amount of harmful grazing that occurs during the growing season.

There is ample opportunity to haul water to productive areas of the allotment which haven't been used (very conservatively 50% of the allotment) or received only slight and light grazing use. Livestock distribution is improving.

The objective can be met.

b. Initially provide approximately 3720 AUMs of forage for wild horses which is prorated demand based on an estimate of 85% of the Herd Management Area located in the allotment.

The AUMs identified for wild horses was a starting point from which future monitoring would determine its validity. These AUMs were determined for the implementation of the 1985 Garfield Flat Wild Horse Interim Removal Plan. These 3720 AUMs were carried forward, for lack of more current data, as an objective to the Walker Resource Area Rangeland Program Summary of 1989. Utilization studies over the past several years have established that a carrying capacity of 3720 AUMs cannot be sustained. These studies were conducted prior to livestock turn out and were specific to wild horses.

This objective has not been met and is not sustainable.

This conclusion can lead a reader to commonly held views that are frequently in error. One is equating domestic cattle use and wild horse use. Both animals can and do overgraze but both are not under the same degree of direct control and management. Wild horses are present year-round, cattle are present during authorized periods of use. In this allotment the authorized period of use is during the key species dormant period. Livestock distribution can be controlled by water hauling and other techniques. Wild horse distribution is not as easily influenced.

Under the situation that is prevalent in the Garfield Flat allotment, simply reducing the number of cattle, which some would feel is a requirement of Bureau policy, would reduce the extent of the area being over-utilized but the remaining cattle would continue to concentrate in the same area for the same reasons that keeps them concentrated in favored areas now. Following the course of actions described in the AMP which are designed to reduce concentrated cattle use in favored areas and provide rest from grazing, especially during the growing season will accomplish the allotment objectives; simply reducing livestock will almost certainly not.

displacement
of permitted
→

The same analysis, however, does not apply to wild horses. Wild horses are creatures of habit (or very territorial). There is no provision for removing them from their preferred use areas for part of the year and then returning them at appropriate times and, even though the Bureau has responsibility for these horses, its responsibility is more like the Nevada Division of Wildlife has for wildlife than that which the permittee has for livestock. Reducing the number of wild horses could well be the only resolution for over-utilization.

The season in which the plants are used is very important. Heavy use levels which occur year after year during the non-growing season will indicate a distribution problem which needs addressing, but not a deteriorating range condition. Heavy use levels occurring year after year during the growing season, however, indicate not only a distribution problem but also a highly probable deteriorating range condition.

Cattle are on the Garfield Flat allotment primarily during the non-growing season. Areas receiving repeated heavy use by cattle indicate a need to distribute the livestock use by finding techniques which draw the cattle away from traditionally favored areas and into areas presently being only lightly used. This is feasible because cattle are domestic animals subject to many methods of control. Wild horses are not confined to fenced pastures or turned out and gathered on specific dates. Horses are in the allotment year-round. Areas regularly being heavily grazed by horses are receiving a significant portion of this use during the growing season. In order to effectively manage these areas and assure that no one area is being adversely affected, it may become necessary to control the number of animals in different portions of the HMA where localized damage is occurring. This will require removal of horses on an as needed basis determined through the monitoring process.

c. Initially provide for approximately 648 AUMs of forage for wild horses which is prorated demand based on estimate of 15% of the HMA located in the Candelaria allotment.

The Walker Resource Area Rangeland Program Summary (1989) initially provided for approximately 648 AUMs of wild horse forage in the Candelaria allotment (renamed Belleville allotment in 1992). This was a prorated demand based on an estimate of 15% of the HMA acreage being in the Candelaria allotment. These AUMs were not based on monitoring of the resource data. Aerial census and field observations reveal that wild horses do not use this area, therefore all AUMs identified for wild horses are located in the Garfield Flat allotment. AUMs in Candelaria allotment will not be used for the purpose of establishing carrying capacity in the Garfield Flat HMA.

This objective is not applicable.

B. Long Term

a. Maintain or improve the condition of the public rangelands and watersheds so as to enhance productivity for all rangeland and watershed values. (This discussion also applies to key area objectives (e.)

Phenology studies for key plant species found in the allotment are as follows:

Shrubs

- Winterfat* Leaf growth, last week of March through the middle of April.
 Twig growth, last week of April to the last week in May.
 Full bloom last half of June.
 Seed dissemination first week in August, leaves dry/drop first week in October.
- Fourwing Saltbush* Leaf growth, early part of March through the first week or so of May.
 Twig growth, latter part of May through the first week in June.
 Full bloom the latter half of June
 Seed dissemination by the last week in September.
- Bitterbrush* Leaf growth the entire month of April
 Twig growth for approximately three-quarters of May.
 Full bloom the latter part of May to the early part of June.
 Seed dissemination by the first week in August, leaves /drop last week in September.

Grasses

- Thurber Needlegrass* Growth starts in early March and continues until the first week of April.
 Flower stalks appear the latter part of May.
 Anthesis in the early part of June.
 Seed dissemination by mid-July, plants dry by mid-August.
- Needle-and-Thread* Growth starts second week of May and continues through mid April.
 Flower stalks appear mid and latter parts of May.
 Anthesis early portion of June.
 Seed dissemination by mid-July, plants dry by the end of August.
- Squirreltail* Growth starts in mid March and continues through the first week of April.
 Flower Stalks appear latter part of May.
 Anthesis in the early part of June.
 Seed dissemination by first week of July, plants dry by mid-August.
- Indian Ricegrass* Growth starts in latter part of March.
 Flower stalks appear the latter portion of May.
 Anthesis in mid June.
 Seed dissemination by first week of July, plants by mid-August.

Regrowth is not considered in the dates shown above since it is highly variable and dependent upon late summer precipitation. These are average phenology periods for eight sites in the Carson City District; data was collected over a four-year period.

With this concern in mind, the grazing treatments and schedules were revised. Since 1990 the pastures have been grazed by livestock as follows:

| | | | |
|------------------------|-------------------------------|-------------------------|------------------------------------|
| <i>Whiskey Pasture</i> | 10/30/94 to 12/31/95 | <i>Garfield Pasture</i> | 01/01/95 to 05/02/95 |
| | 02/16/94 to 04/23/94 | | 11/01/93 to 02/15/94 |
| | 02/15/93 to 04/23/93 | | 11/05/92 to 02/14/93 |
| | 11/01/91 to 12/31/91 | | 01/01/92 to 04/15/92 (3) |
| | 10/18/90 to 01/07/91 | | 01/15/91 to 04/25/91** |
| | Always spring prior to change | | Always fall/winter prior to change |

**In this grazing year the livestock spent 01/08/91 to 01/14/91 and 04/26/91 to 04/29/91 in Rattlesnake pasture which lies between the main grazing pastures.

A prime consideration when evaluating this objective is what occurred prior to 1990 as compared to what has occurred since 1990. *Whiskey pasture* was used every year, by livestock during the early growth period of the plants (February - April). For the most part, wild horses make no use in the pasture. *Garfield pasture* was used every year during the dormant season by livestock. This pasture contains the heart of the HMA and therefore portions of the pasture receive yearlong use by wild horses.

Whiskey Pasture

Key area (G-001) utilization objectives are to maintain the use level at or below 70% on the grasses. This level has been met every year since the revision (1990). Prior to the revision, the objective was met every year.

Frequency studies (80% confidence level) show that Indian ricegrass and desert needlegrass have remained stable while squirreltail has declined significantly over a ten year period. Since the initiation of the new treatments and schedules, both ricegrass and needlegrass are in an upward trend. Ricegrass is approaching its baseline value while needlegrass has exceeded its baseline value. For these two species, the trend is upward. Squirreltail, on the other hand, is steadily decreasing in frequency. This is to be expected since it is supposed to be only a minor component of the vegetative resource (SCS Range Site Guide). It was and still remains the dominant species in relation to its frequency of occurrence.

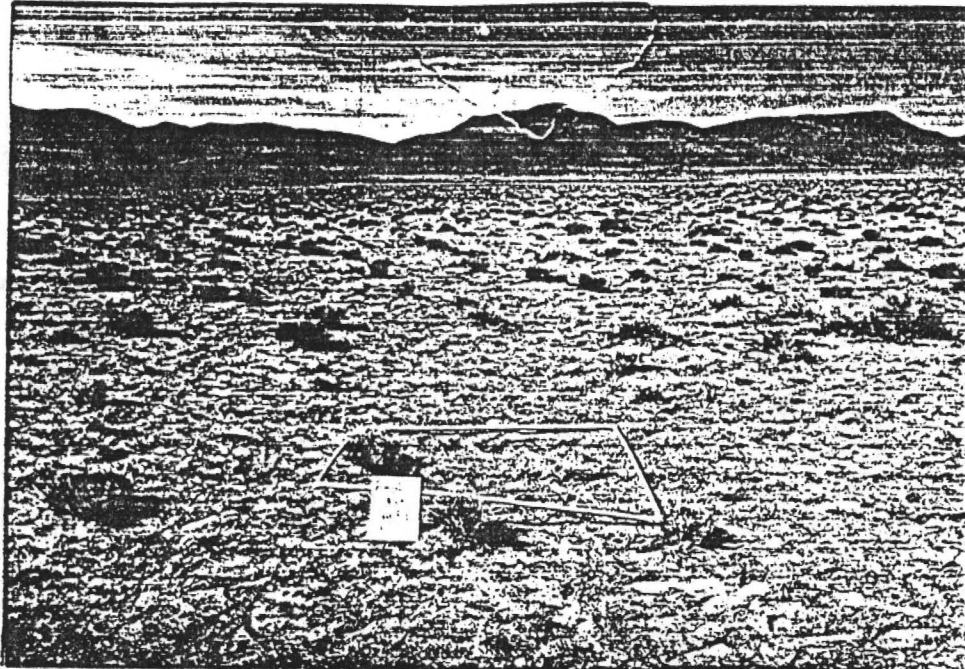
For key area G-002, the use level objective for grasses (ricegrass) was exceeded only once (1990) during the evaluation period. The balance of the time use levels were met. For the shrub component the objective strives to keep use levels below 50%. This objective was met only once (1986).

Frequency studies (80% confidence level) show that the ricegrass component has remained stable over the ten year period while needlegrass is in a downward trend. Needlegrass use levels were consistently below 50% with the exception of 1986. Frequency for winterfat remains stable although the use level objective was never met. Since the initiation of the new treatments and schedules, needlegrass is downward in trend but this drop has only occurred between 1991 and 1994. Ricegrass, since the change, it has steadily been increasing in abundance and is nearing its baseline value. Winterfat has not changed.

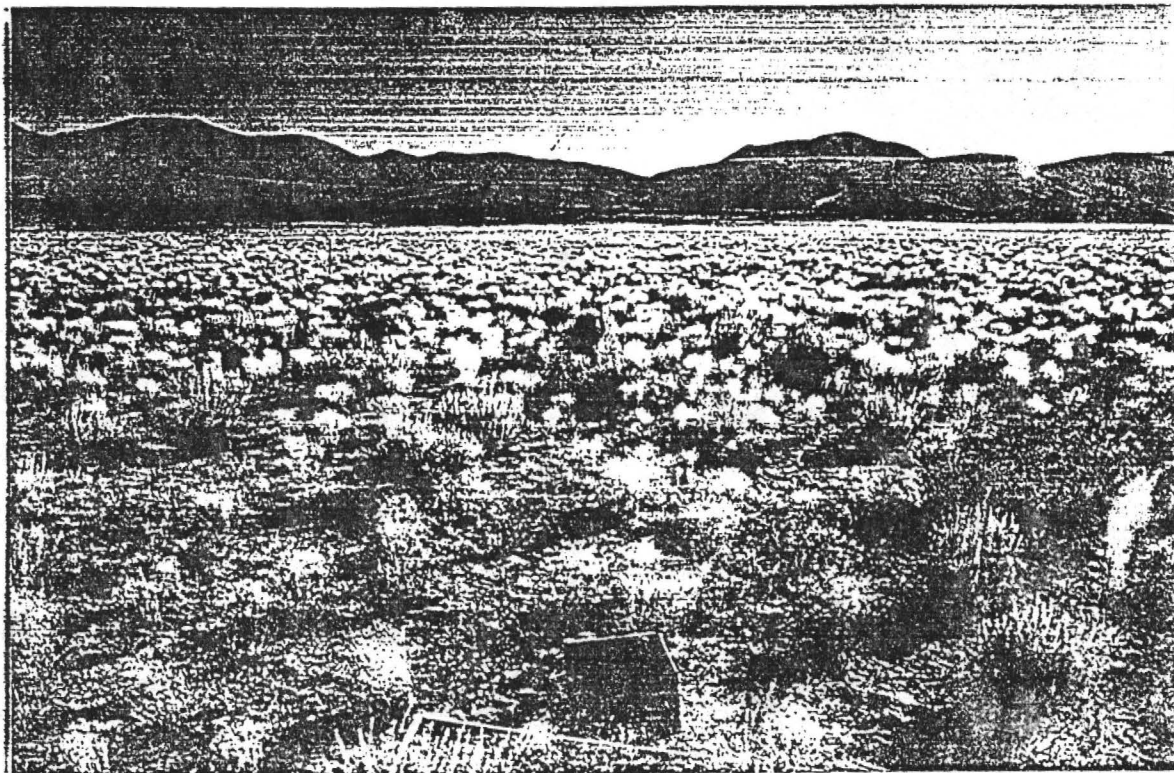
GARFIELD PASTURE

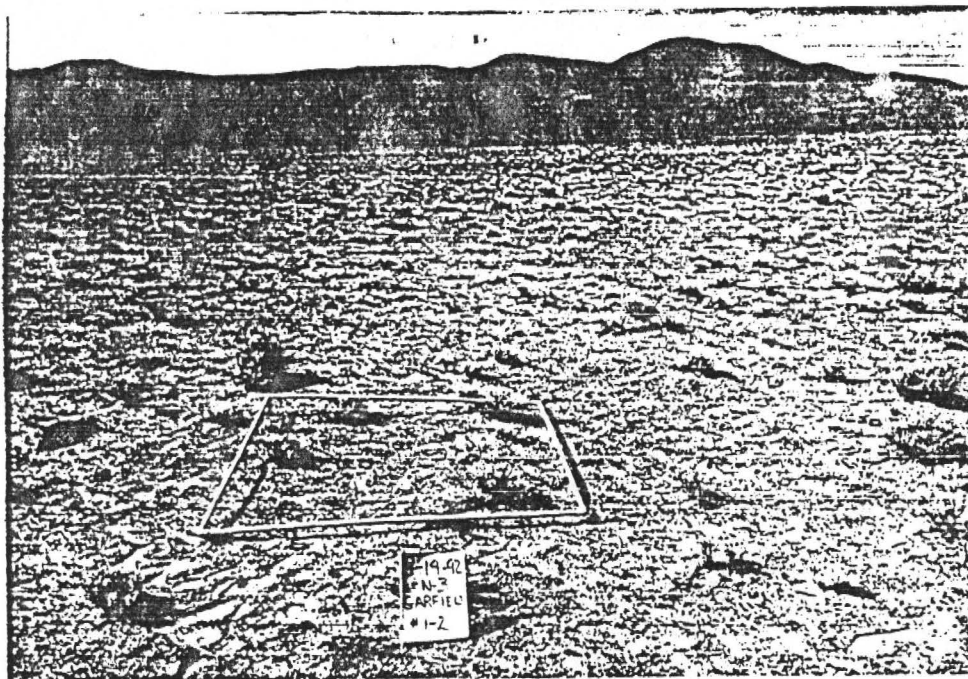
For key area G-003, the use level objectives strive to keep use levels at or below 50% on shrubs and at or below 70% for grasses. Use levels have consistently been below the objective for grasses since the revision (1990). Prior to this period, they also were below this level. Fourwing use levels have consistently exceeded the 50% use level objective. The 50% use level objective for winterfat was exceeded with the exception of two years, 1994 and 1987.

Frequency studies show that for all species at the 80% confidence level, the trend is downward. Only for ricegrass, between 1991 and 1994 has there been an increase. Up through 1992, this was a favorite spot for the horses as evidenced by the following photos. After the 1993 gather and release of all wild horses, the grazing habits of wild horses changed and the vigor of the grass species began to rebound.

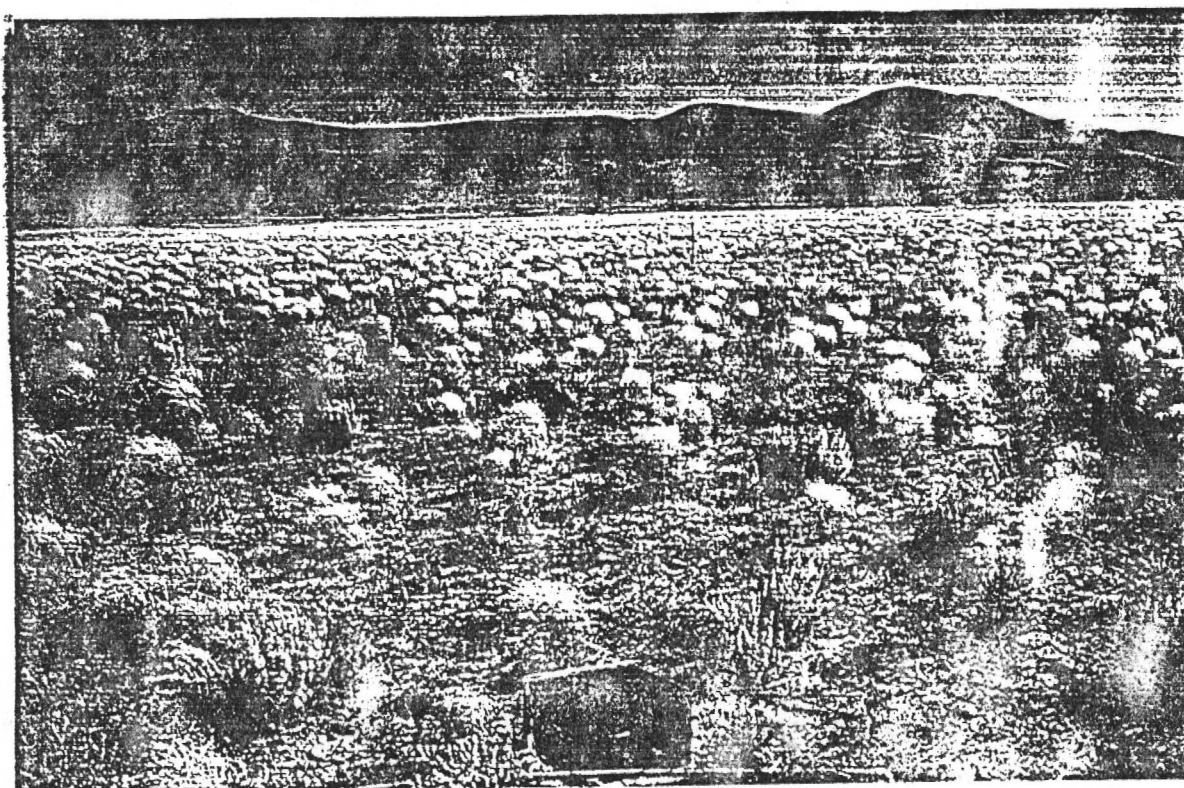


Upper Photo - Photo Trend Plot 1-1, photo taken on August 14, 1992.
Lower Photo - Photo Trend Plot 1-1, photo taken August 7, 1995,





Upper Photo - Photo Trend Plot 1-2, photo taken on August 14, 1992.
Lower Photo - Photo Trend Plot 1-2, photo taken August 7, 1995,



The site is low in grasses and high in shrubs. With the direction of the trend, it is moving toward PNC.

For key area G-004, the use level objectives strive to stay below 70% on grasses and 50% on shrubs. Use levels have consistently been met for the grasses. For the times it was recorded for Atca it has been met. For winterfat it has never been met. This site is also located in an area that is used by horses. Unlike G-003, the pattern of use has not changed.

Frequency studies for all three plant species at the 80% confidence level show a downward trend.

On an overall basis the objective is being met.

- b. Maintain wildlife habitat to achieve a long term goal of 420 mule deer from January 15 to May 15 and 44 mule deer yearlong (552 AUMs).

As noted earlier, data is not available on mule deer numbers to allow a comparison against projected reasonable numbers for the Garfield Flat Allotment. Based on the information provided thus far, it is evident that mule deer are the only significant users of the area delineated as deer habitat. In short, deer are not competing with any other large mammals for available browse, forbs, or grass. The one bitterbrush browse transect indicates that deer are only making slight use of available browse during the winter, when deer numbers are expected to be at their highest level. Though this information alone cannot conclusively support the position that 552 AUMs of deer forage are available, it does suggest that there is ample forage to support a substantial increase in deer use.

Though there are numerous variables affecting the Mono Lake subherd, if it is later determined that habitat in the Garfield Flat Allotment is contributing as a limiting factor, management attention directed toward shifting current woodland communities to grass/shrub communities would yield the best results.

The habitat objective is being met.

- c. Continue to provide 3516 AUMs of forage for livestock use.

Adequate forage is available to meet the active preference (refer to discussion under Short Term Objectives, a.) if the permittee implements a more expansive water hauling program along with herding cattle. To date, the permittee has not chosen to follow this course of action, which would be necessary in the Bureau's view to attain this level of use.

This objective is considered to have been met. Lack of forage is not an issue. The permittee has chosen to run below the active preference.

- d. Maintain or improve wild horse habitat and free-roaming behavior (1) consistent with wildlife and livestock objectives; (2) assuring that all waters remain open to use by wild horses; and (3) by protecting or enhancing the wild horse ranges.

Wild horse habitat and free-roaming behavior has not been improved but, overall, has been maintained. Trend is downward at key area G-003 but since 1993 the frequency of grass species has increased. Waters (all on private land) have remained open to use by wild horses. Their free-roaming behavior has been disturbed by the expansion of private land in Garfield Flat following congressional legislation. This private land was fenced and used as a bombing range. The wild horses have adjusted by moving further from the private lands on the flat.

Overall, this objective is being met.

VI. TECHNICAL RECOMMENDATIONS

A. Livestock

In order to adequately determine its effectiveness, it is recommended to allow the grazing treatments and schedules outlined on pages 8 and 9 to continue through the 2001/2002 grazing season. Additional time is needed to more fully evaluate the performance of the operation in meeting land use plan objectives.

The existing livestock period of use (11/1 through 4/15) is beneficial to the key forage plants. Use is made mostly during the dormant period. It is not until early March that growth starts for the grass and shrub species. Livestock use ends on 4/15. The amount of time that the livestock are in a single pasture during the growing season is minimal and occurs only two years out of four.

Monitoring data indicates livestock distribution is improving. Data also shows that for Whiskey pasture, the grazing system is having positive results. Both key areas are moving toward the potential native community. For Garfield pasture, data shows that this area has been negatively affected by season long grazing. At key area G003, since the wild horses have shifted grazing habits, the area is slowly recovering. Based upon historical photos, this area has dramatically improved since the early 1970's. Key area G004 is not responding as desired. Horses continue to use the area the entire growing season. Without relief, this downward trend is expected to continue.

A major portion of the allotment remains unused. With the initiation of a more expansive water hauling program, pushing cattle into areas of nonuse when snow is available to supplement for the lack of water, or a combination of both, the active preference is available.

Flexibility in the number of livestock is allowed beyond the normal operation of 450 cattle from 11/1 to 4/15. For clarification, if all active preference were to be used, this would equate to 732 cattle from 11/1 to 4/15.

It is recommended that the existing period of use be kept intact (11/1 through 4/15) and the terms and conditions of the allotment management plan remain in effect with the additional modification. Currently no use, without prior written approval, is allowed after 4/15. It is recommended that flexibility be incorporated to allow grazing until April 30 without prior written approval from the authorized officer.

In order to more effectively utilize the allotment and balance out use, flexibility which allows the permittee to turn out earlier, remain later, or move livestock amongst pastures, beyond the flexibility currently allowed in the AMP, when resource problems arise, is necessary to properly manage and safeguard the resources.

For example, an above normal year of production has occurred. The permittee turned livestock out in the Whiskey pasture and then moved them to the Garfield pasture for the balance of the grazing period. An abundance of feed remains in the Whiskey pasture. The eastern half of Garfield pasture has a concentration of wild horses and we can see that by allowing livestock to remain in this area will result in harmful grazing. Since adequate forage remains in Whiskey, the permittee is allowed to move livestock to this area for the balance of the grazing period.

Modifications were recommended in the original evaluation for key area objectives identified in the AMP. A standard modification to all key area objectives was the change from managing for a seral stage to managing for a desired plant community (DPC). The Ecological Site Inventory data would be the basis for measuring DPC.

On August 21, 1995, the revised Grazing Administration regulations became effective. Subpart §1784 identified the need for the establishment of Advisory Committees. This action has been completed. As part of the RAC's function and as defined under subpart §4180, it is to develop Standards and Guidelines, no later than February, 1997 that will be used to ensure compliance with subpart §4180.1 (a,b,c,d). This is an ongoing effort. Until such time as these standards and guidelines are completed, the standards provided in paragraph (f)(1) of this section and guidelines provided in paragraph (f)(2) of this section shall apply and will be implemented in accordance with the regulations.

The applicable fallback standards and guidelines will be used in lieu of key area objectives. Upon approval by the Secretary, the applicable standards and guidelines developed by the Resource Advisory Council will be used in lieu of the key area objectives.

It was stated in the original evaluation that in order to achieve some of the key area objectives it would be necessary to impact sagebrush and greasewood by feeding hay upon them during the winter use period. This was interpreted by some as meaning this action was necessary to justify the active preference. This is an erroneous interpretation. It is solely a site specific vegetative manipulation effort designed to modify the current vegetative community through intense animal disturbance. The end result will be a more productive and diverse plant community. Though there are other tools which could accomplish the same objective (prescribed burning, mechanical manipulation, etc.) this is

the most efficient and economical means available. The result would be improved plant diversity, decreased soil erosion and improved wildlife habitat. A similar management action is occurring in the Belleville allotment. In 1994, after the first year of grazing, both the grazing permittee and Bureau personnel noticed an increase in ricegrass seedlings. After the second year of grazing, monitoring results indicated that the bare space between perennial plants decreased from approximately 16 inches before grazing to 5 inches. Most of this was due to an increase in Indian ricegrass. Perennial plant seeds must be worked into the soil with organic matter to produce seedlings. Otherwise the solid surface becomes crusted and is impenetrable to both seed and plant litter (seeds do not germinate and litter dries up and is not broken down into the essential organic compounds. Also, an accumulation of dead material in grass plants will cause them to become unhealthy and eventually die out. Successful organic gardeners will remove dead material from their garden, compost it, then work it back into the soil either with seed or around living plants to retain moisture and provide nutrients. This action was duplicated on a larger scale when the cattle removed the dead material and their hoof action of the cattle caused seed, manure, and surface litter to be worked into the soil. The greatest response was in the area surrounding the water trough where impacts were the greatest. A key factor to success was that the cattle were removed shortly after impacts occurred, which allowed plants to regrow and seedlings to establish.

Creating a more diverse plant community will provide additional benefits for the many non-game species that live in the allotment. The diverse plant community will also encourage the pronghorn antelope, which have been seen on the west side of the allotment between Sodaville and Mina, to possibly expand their range further to the west. Increasing the ground cover and providing additional root structure will help stabilize the soil and reduce erosion.

It is recommended that this type of management action be applied whenever the objective is to modify the landscape to a more diverse, productive vegetative community that will benefit wildlife, wild horses, and livestock.

B. Wild Horses

Establishment of an Appropriate Management Level (AML) for wild horses within the Garfield Flat allotment is based primarily on water availability rather than forage availability. In the 1992 allotment evaluation, the AML was identified as 116 wild horses. This figure was arrived at through monitoring of forage use levels, identifying the areas of horse use, particularly concentration areas, and the potential for an agreement between the permittee and the Bureau to continue to have access to water provided from the sources located on private land.

After the 1992 allotment evaluation was completed, another forage utilization study was conducted which verified the need for reduction of wild horse numbers. This study estimated the carrying capacity at 125 wild horses. These carrying capacity calculations are found in Appendix IV. This more recent study is used to estimate the proper number of wild horses which can graze this area on a sustained yield basis.

APPENDIX I

MAPS

| | |
|------------|------------------------------------|
| MAP NO. 1 | GENERAL LOCATION MAP |
| MAP NO. 2 | WILD HORSE HERD MANAGEMENT AREA |
| MAP NO. 3 | MULE DEER HABITAT AREAS |
| MAP NO. 4 | WATER RESOURCES |
| MAP NO. 5 | KEY AREA LOCATIONS |
| MAP NO. 6 | THREATENED AND ENDANGERED SPECIES |
| MAP NO. 7 | AMP PASTURE DELINEATIONS |
| MAP NO. 8 | 1993/94 USE PATTERN MAP |
| MAP NO. 9 | 1992/93 USE PATTERN MAP |
| MAP NO. 10 | 1991/92 USE PATTERN MAP |
| MAP NO. 11 | 1990/91 USE PATTERN MAP |
| MAP NO. 12 | 1989/90 USE PATTERN MAP |
| MAP NO. 13 | 1988/89 USE PATTERN MAP |
| MAP NO. 14 | 1987/88 USE PATTERN MAP |
| MAP NO. 15 | 1986/87 USE PATTERN MAP |
| MAP NO. 16 | PHOTO TREND PLOT LOCATIONS |
| MAP NO. 17 | EXISTING RANGE IMPROVEMENTS |
| MAP NO. 18 | PROPOSED RANGE IMPROVEMENTS |
| MAP NO. 19 | INTERCHANGE LANDS (F.S. TO B.L.M.) |

NORTH

MAP NO. 1

GENERAL LOCATION MAP

HAWTHORNE

LUNING

CARFIELD PASTURE

PASTURE BOUNDARY

MINA

FOREST SERVICE

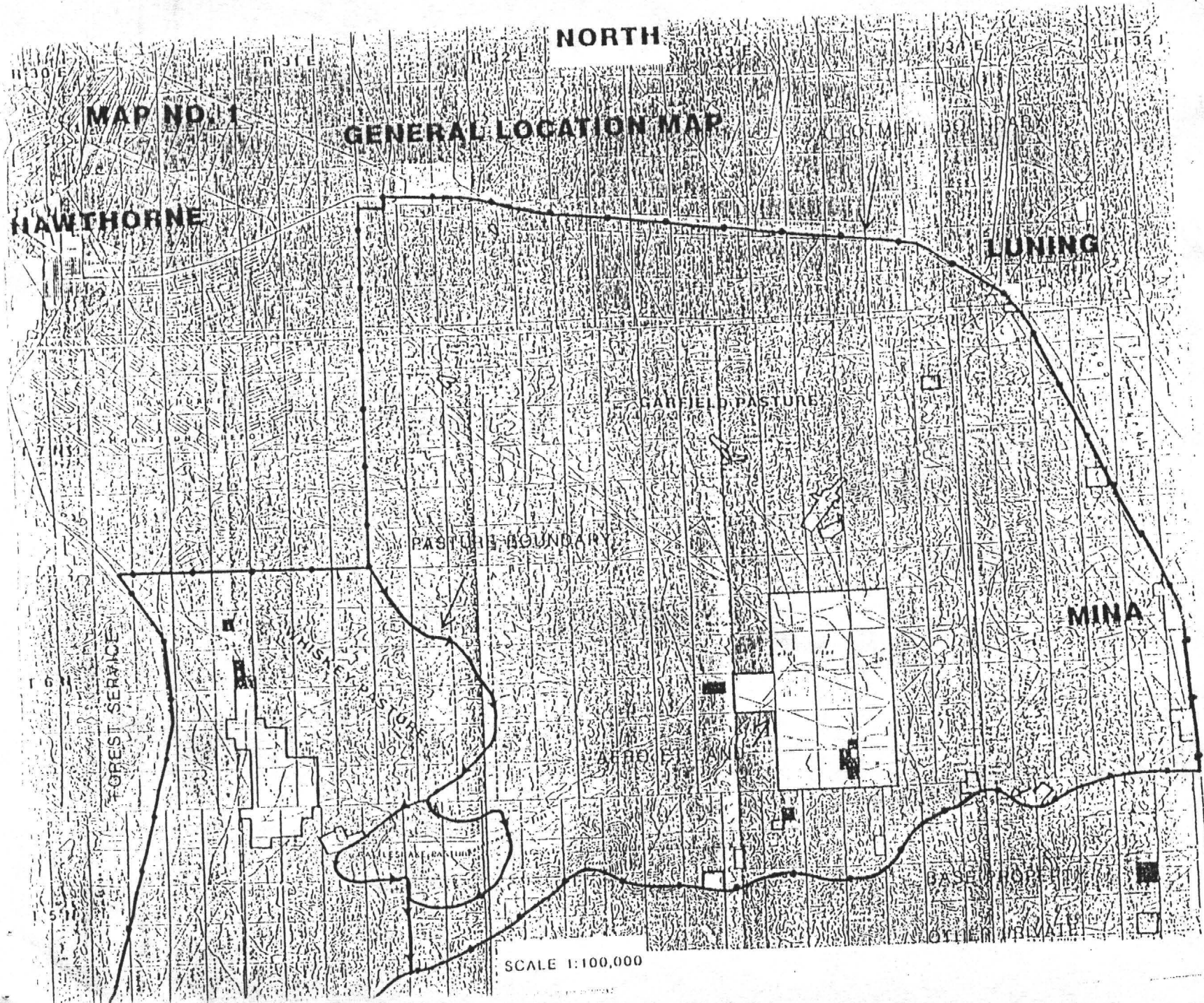
WISKEYE CREEK

APPROXIMATE

BASE MAP

OTHER MAPS

SCALE 1:100,000



NORTH

MAP NO. 2

WILD HORSE HMA

ADJUTMENT BOUNDARY

PARFIELD PASTURE

PASTURE BOUNDARY

HERD MANAGEMENT AREA

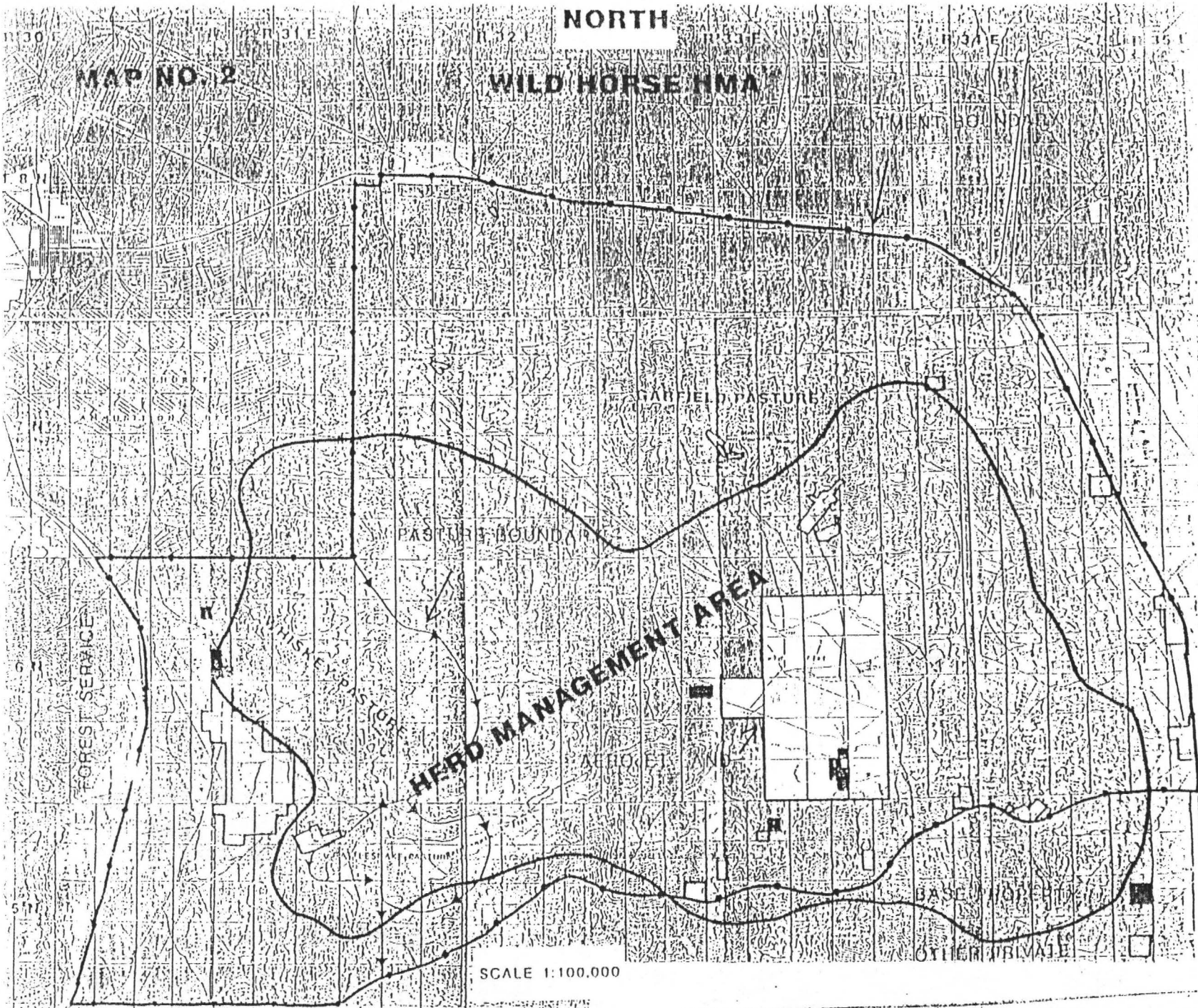
AREO ET

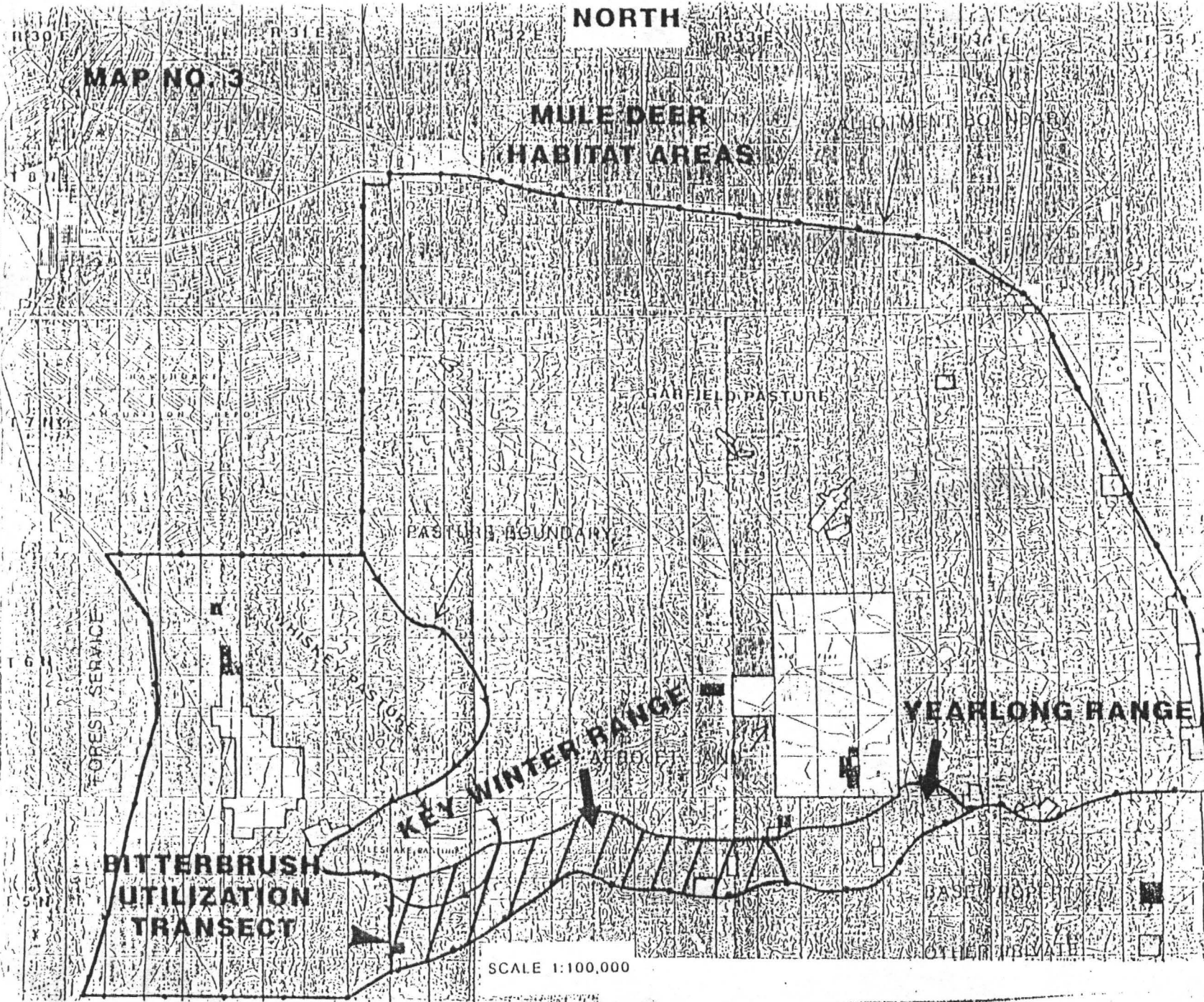
BASE

OTHER TRIMALE

FOREST SERVICE

SCALE 1:100,000





MAP NO. 3

NORTH

MULE DEER
HABITAT AREAS

GARFIELD PASTURE

PASTURE BOUNDARY

KEY WINTER RANGE

YEARLONG RANGE

BITTERBRUSH
UTILIZATION
TRANSECT

SCALE 1:100,000

FOREST SERVICE

MOUNTAIN BOUNDARY

LESIAKE RANCH

BASIN

OTTER CREEK

NORTH

TAP NO. 4

WATER RESOURCES

ALLOTMENT BOUNDARY

GARFIELD PASTURE

PASTURE BOUNDARY

WHISKEY PASTURE

WHISKEY SPRING

GARFIELD SPRING

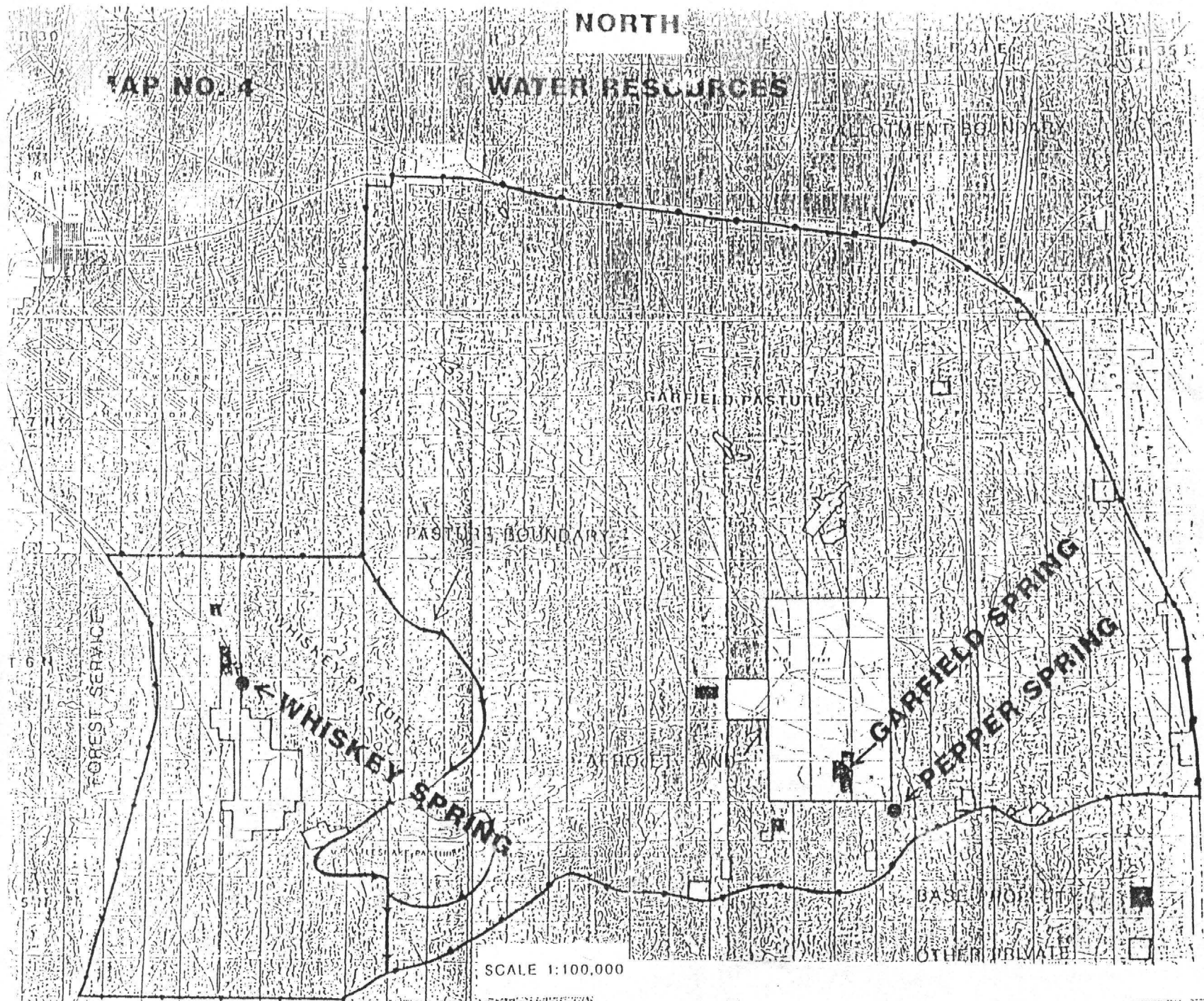
PEPPER SPRING

FOREST SERVICE

SCALE 1:100,000

BASE MAP

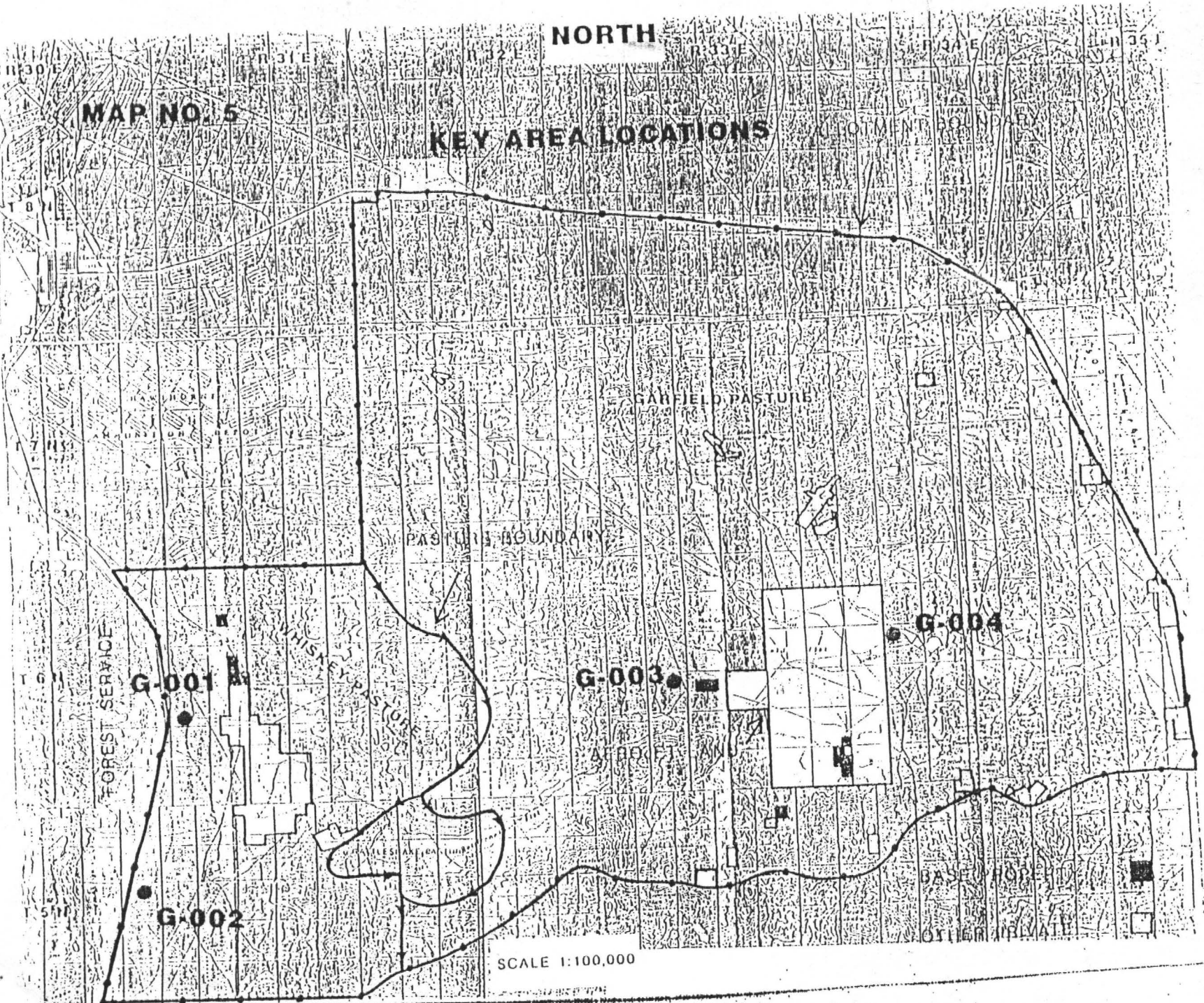
OTHER SYMBOLS



NORTH

MAP NO. 5

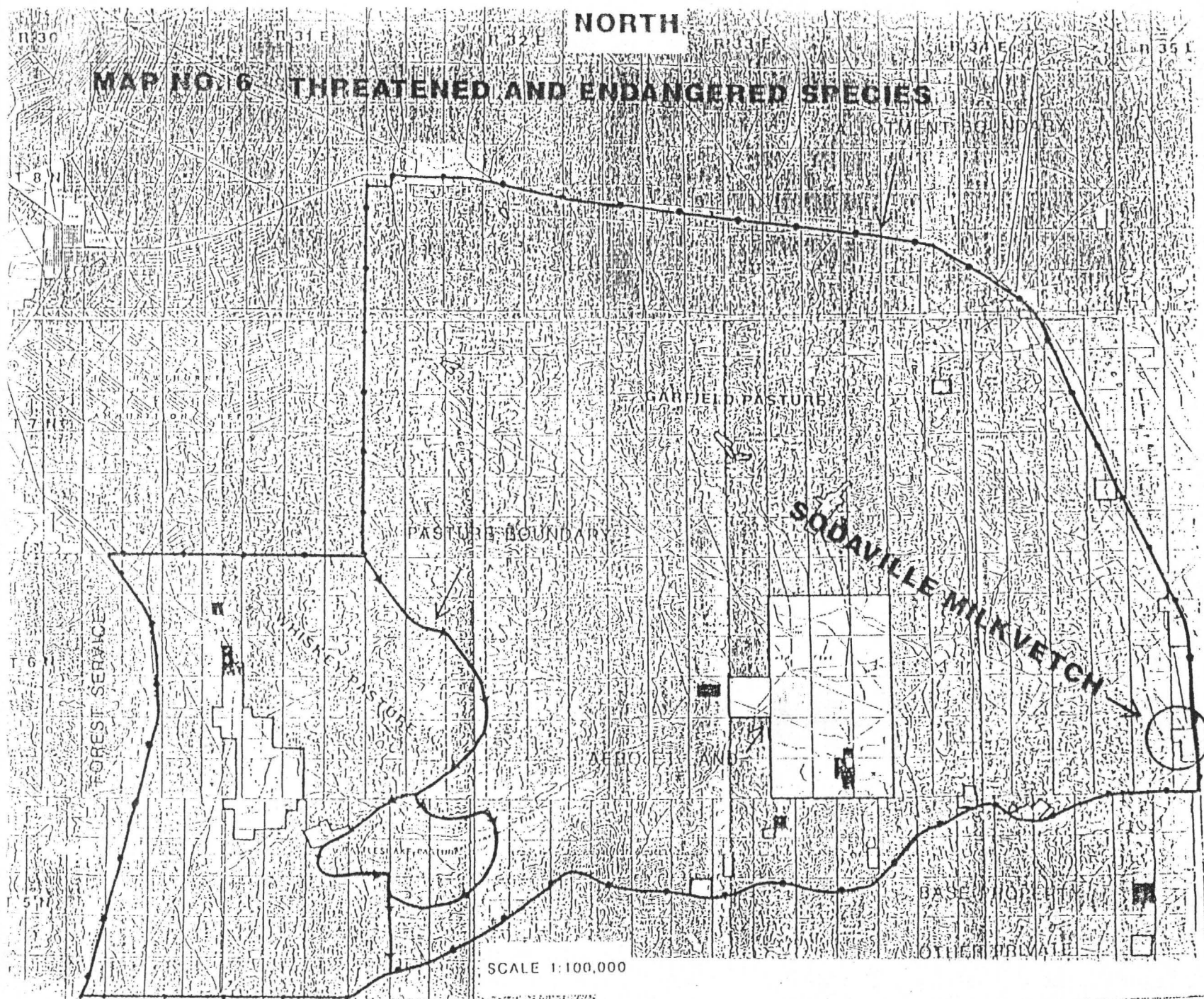
KEY AREA LOCATIONS



SCALE 1:100,000

NORTH

MAP NO. 6 THREATENED AND ENDANGERED SPECIES

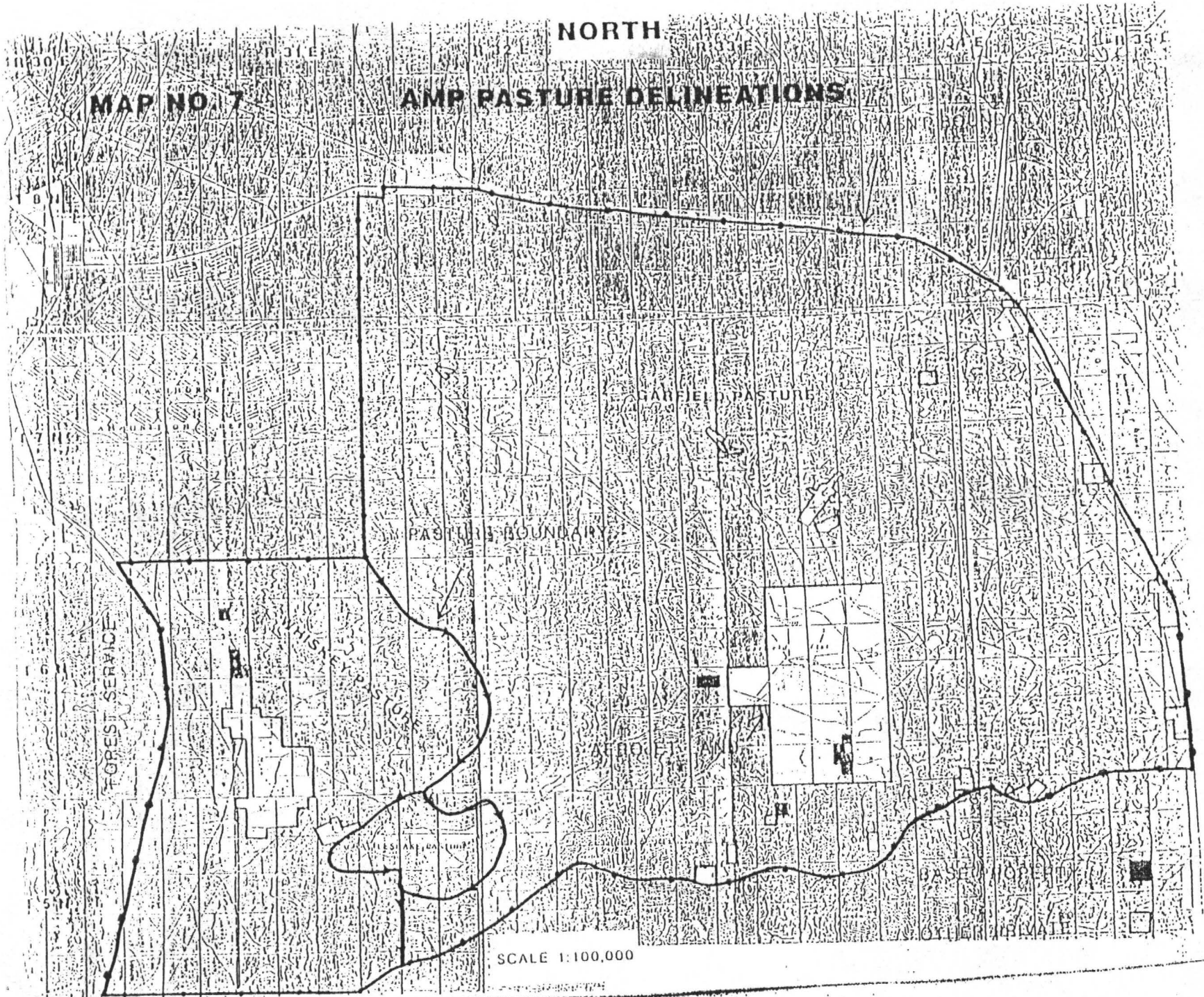


SCALE 1:100,000

NORTH

MAP NO. 7

PASTURE DELINEATIONS



PASTURE BOUNDARY

GARFIELD PASTURE

FOREST SERVICE

AIRPORT

BASE

PRIVATE

SCALE 1:100,000

R 31 E

T 5 N

NORTH

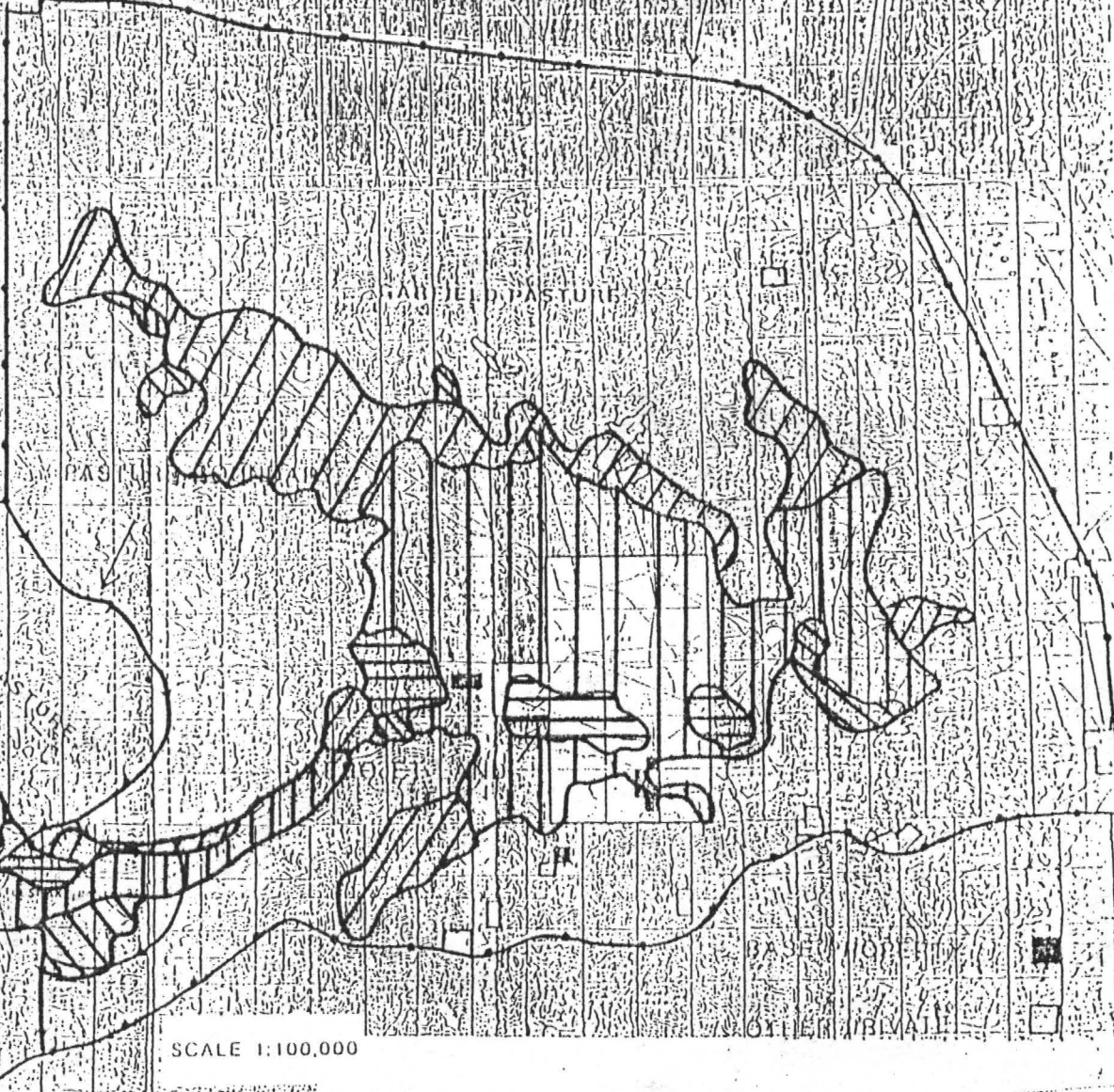
MAP NO. 9

1992/93 USE PATTERN MAP

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE



FOREST SERVICE



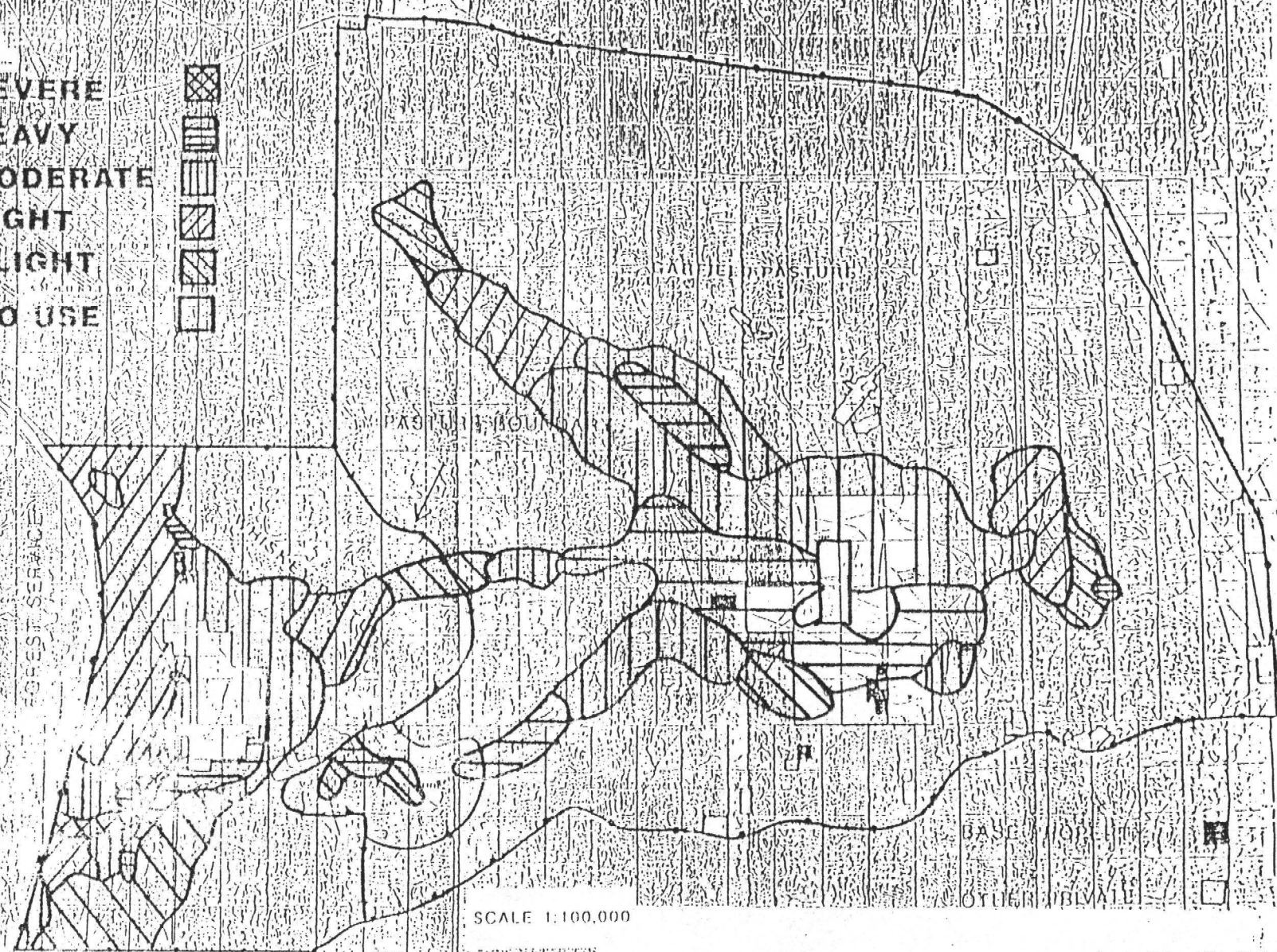
SCALE 1:100,000

NORTH

MAP NO. 10

1991/92 USE PATTERN MAP

SEVERE
 HEAVY
 MODERATE
 LIGHT
 SLIGHT
 NO USE



NORTH

MAP NO. 11

1990/91 USE PATTERN MAP

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE



FOREST SERVICE

PASTURE BOUNDARY

PASTURE

SCALE 1:100,000

PASTURE

OTHER PRIVATE

NORTH

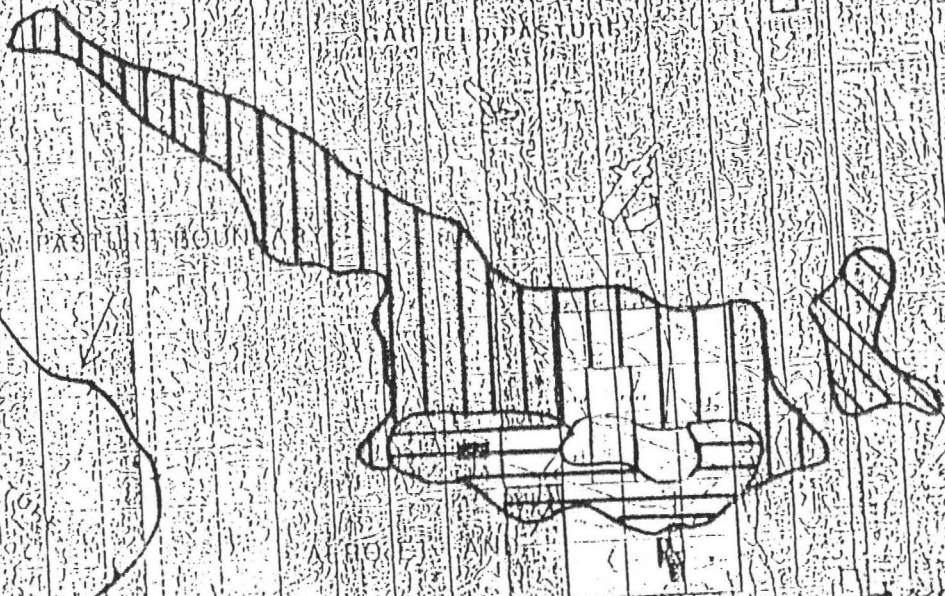
MAP NO. 12

1989/90 USE PATTERN MAP

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE



FOREST SERVICE



SCALE 1:100,000

NORTH

MAP NO. 13

1988/89 USE PATTERN MAP

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE

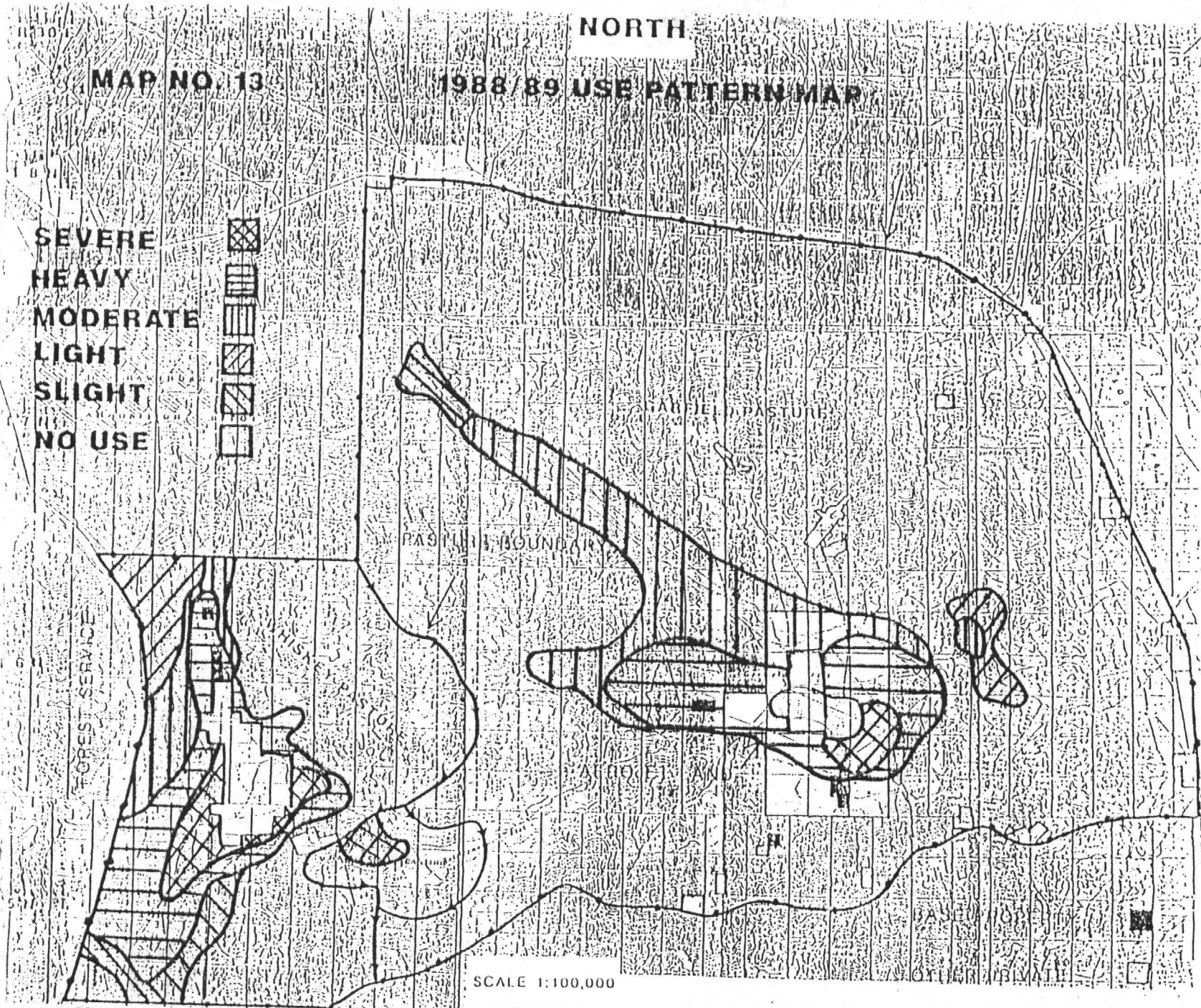


PASTURE BOUNDARY

PASTURE

FOREST SERVICE

SCALE 1:100,000

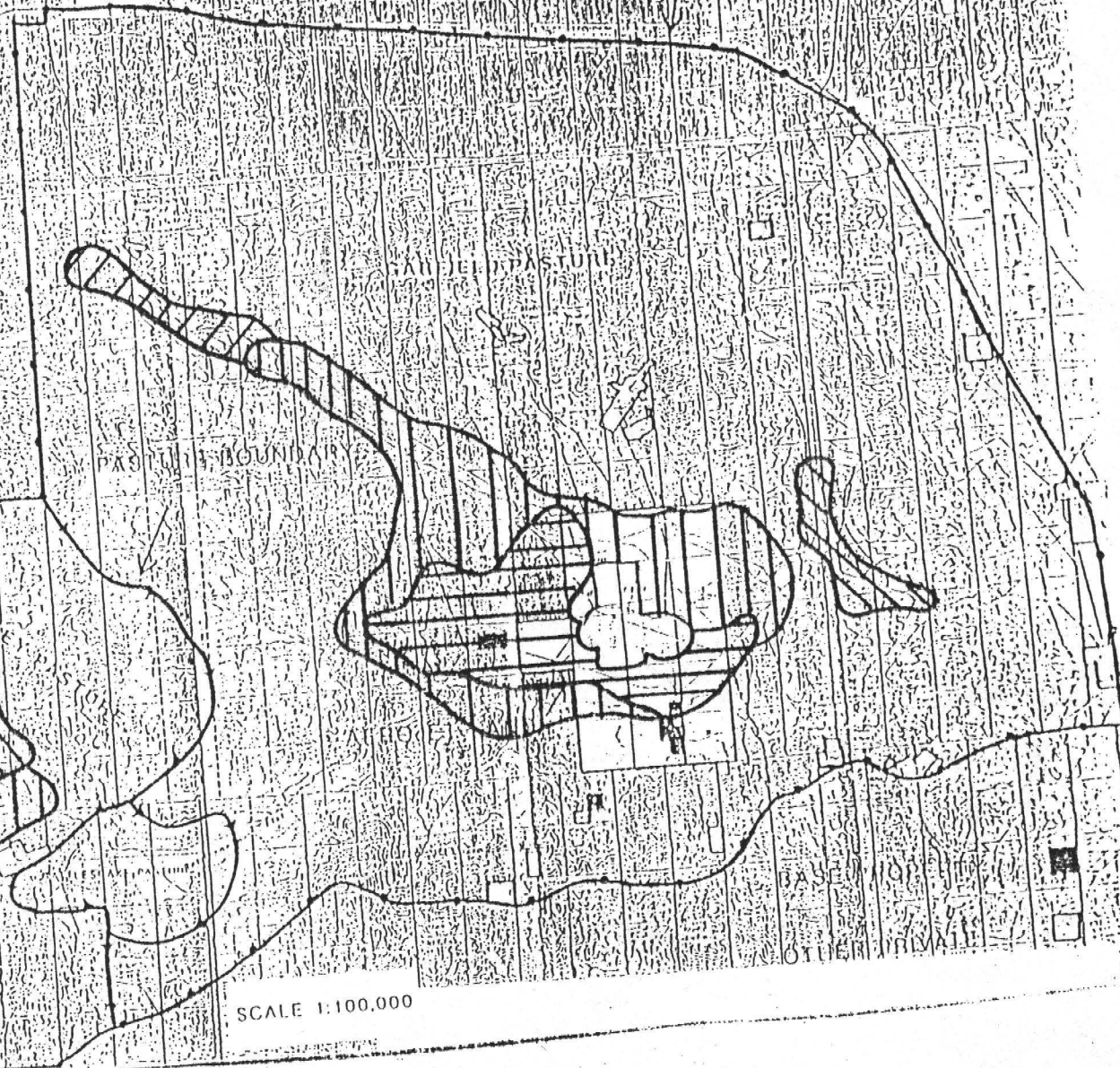


NORTH

1987/88 USE PATTERI MAP

MAP NO. 14

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE



FOREST SERVICE

SCALE 1:100,000

NORTH

MAP NO. 15

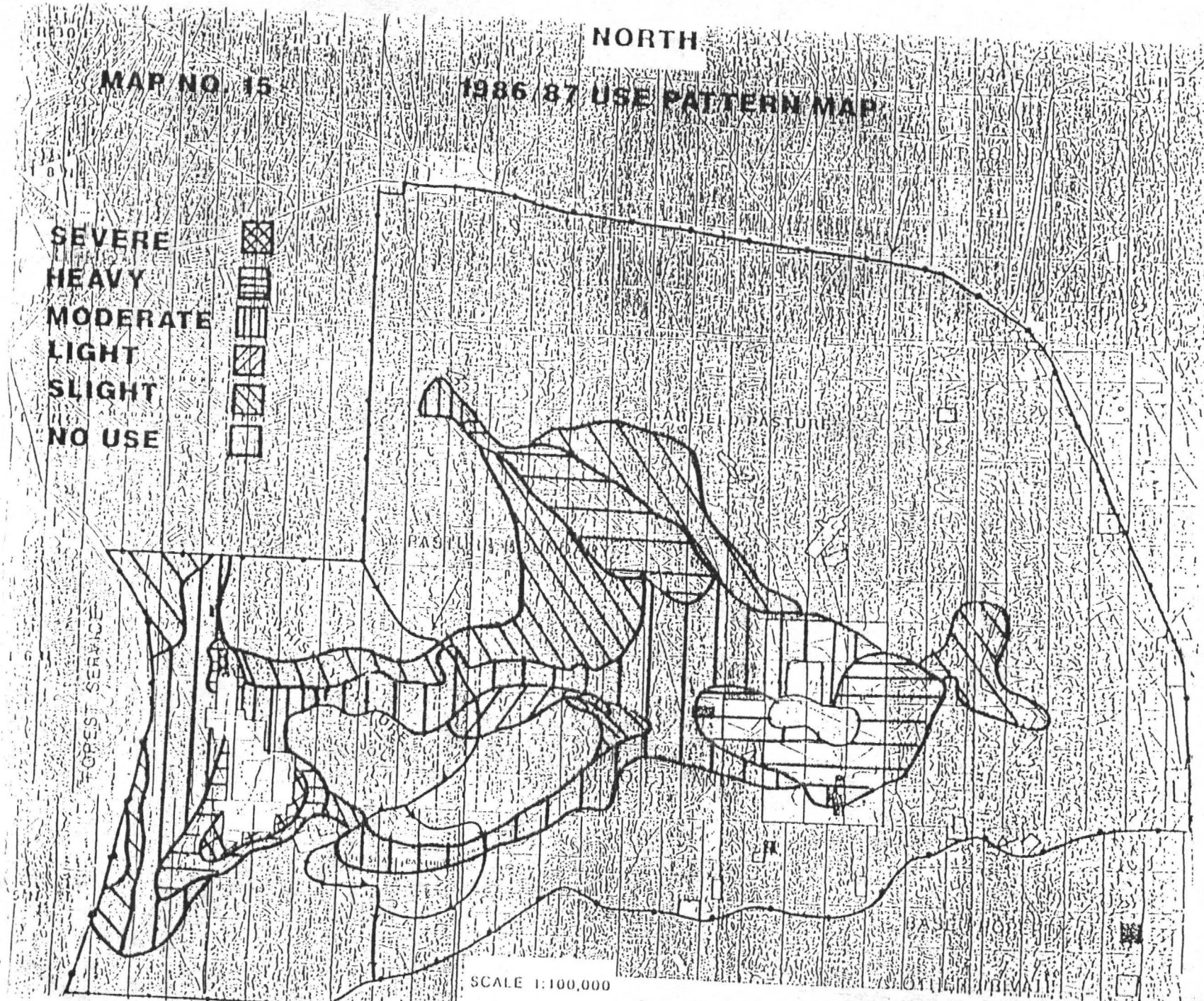
1986/87 USE PATTERN MAP

SEVERE
HEAVY
MODERATE
LIGHT
SLIGHT
NO USE



FOREST SERVICE

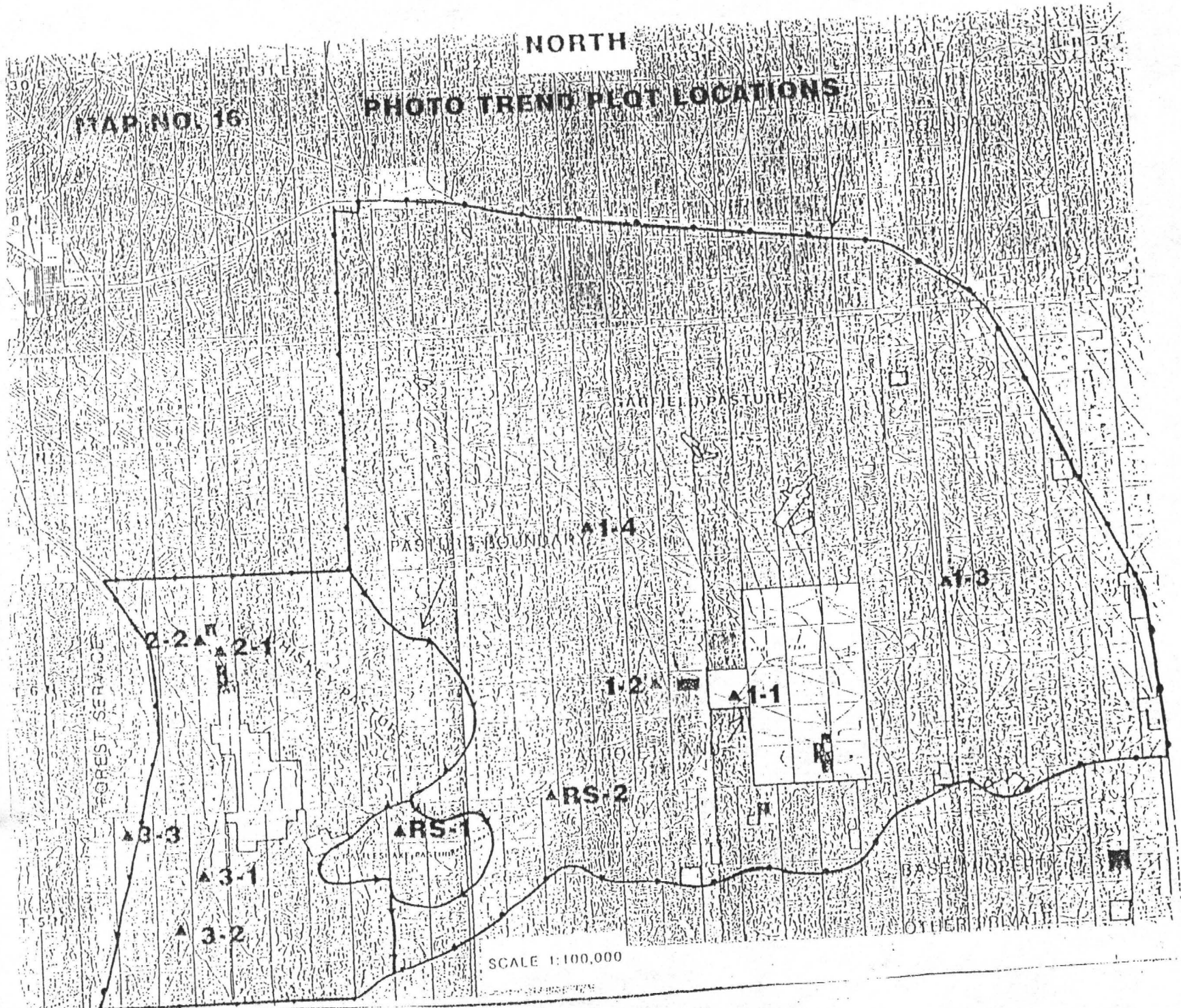
SCALE 1:100,000



NORTH

MAP NO. 16

PHOTO TREND PLOT LOCATIONS



PASTURE BOUNDARY

▲1-4

▲1-3

▲2-2

▲2-1

▲1-2

▲1-1

▲ARS-2

▲ARS-1

▲3-3

▲3-1

▲3-2

SCALE 1:100,000

FOREST SERVICE

GARDEN PASTURE

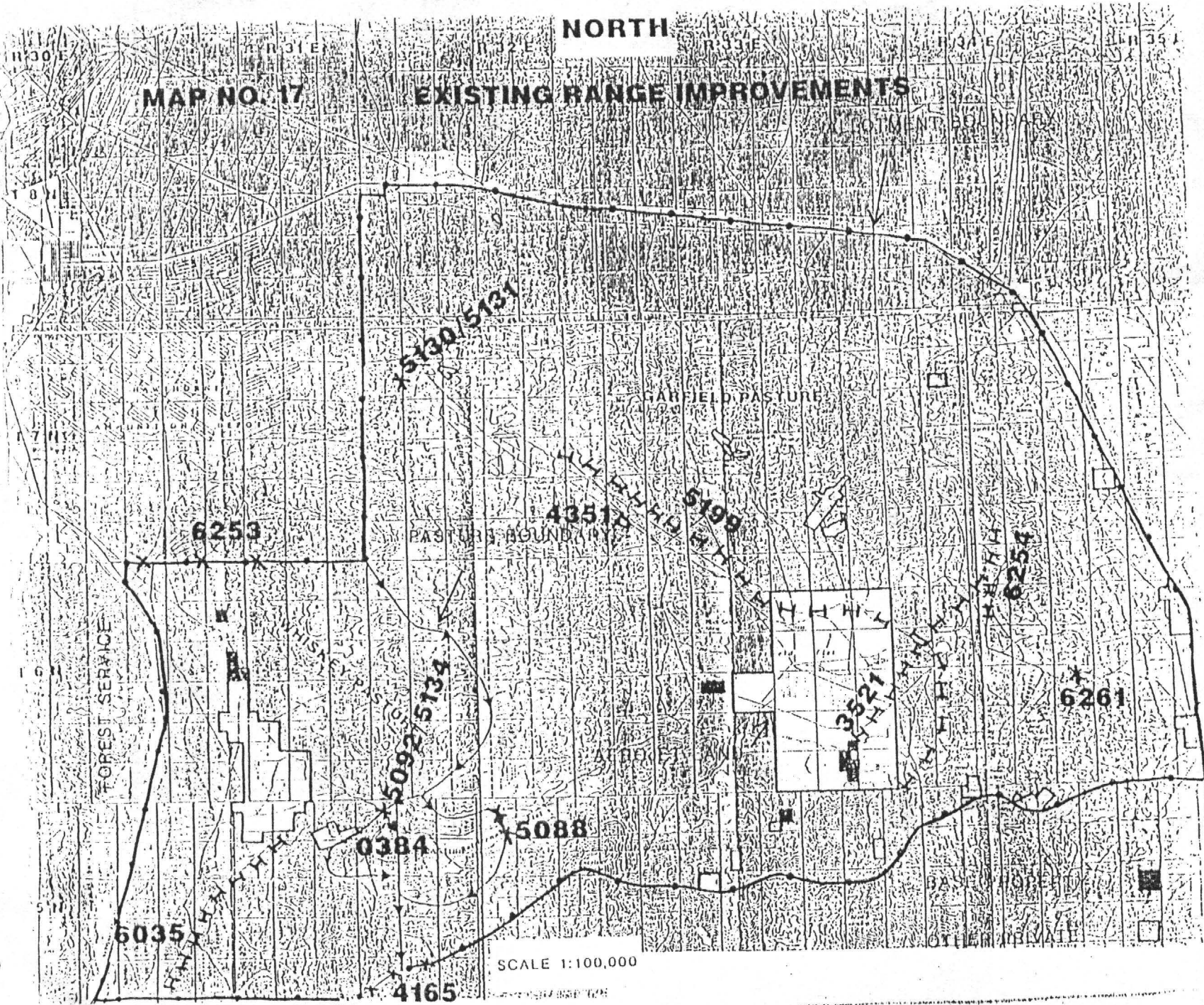
BASE MOUNTAIN

OTHER PRIVATE

NORTH

MAP NO. 17

EXISTING RANGE IMPROVEMENTS



SCALE 1:100,000

NORTH

MAP NO. 18

POTENTIAL RANGE IMPROVEMENTS

U.S. 95 RIGHT-OF-WAY FENCE

PIPELINE EXTENSION

GARFIELD PASTURE

PASTURE BOUNDARY

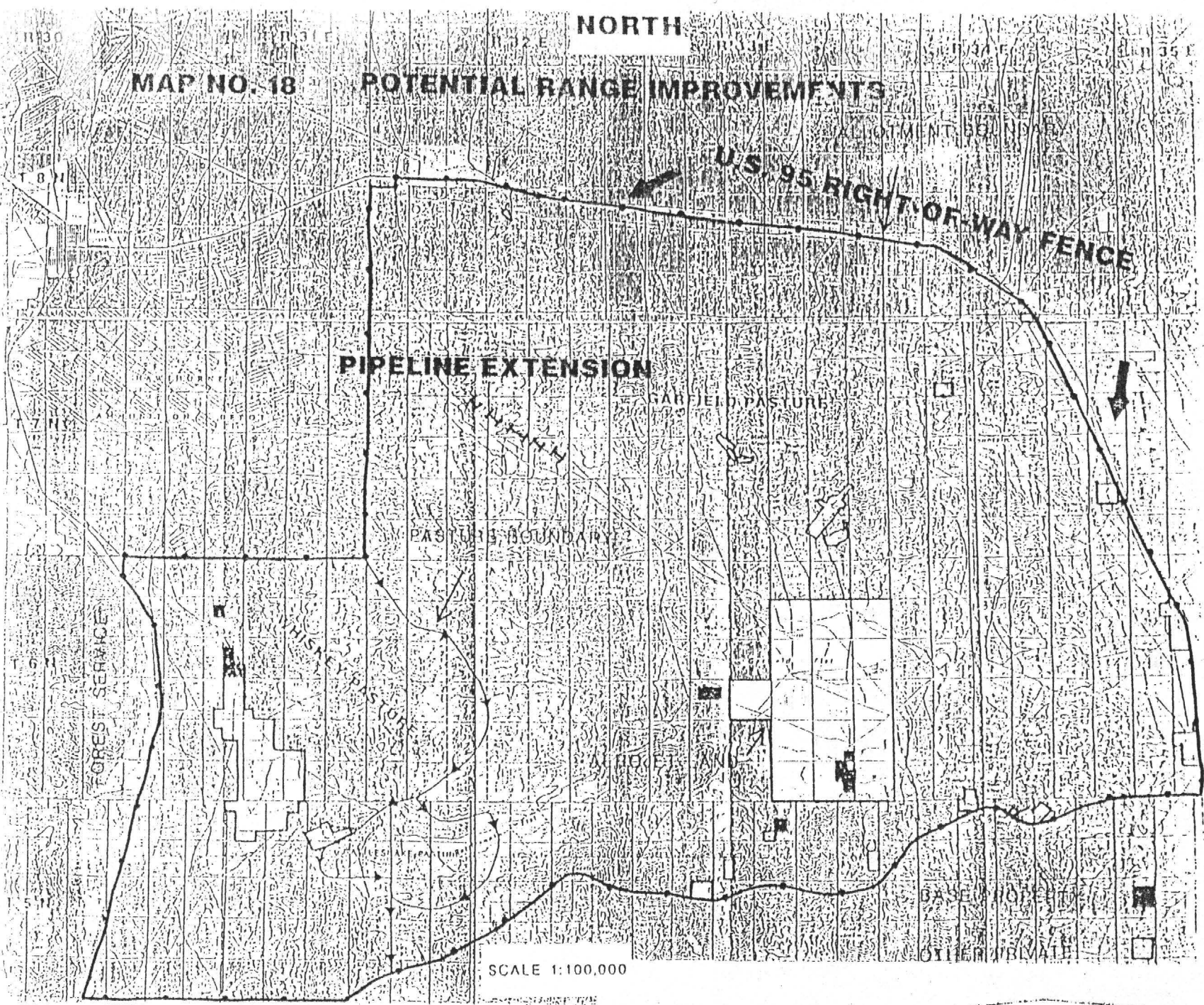
FOREST SERVICE

HISKEY

SCALE 1:100,000

BASE MAP

OTHER BIVALE

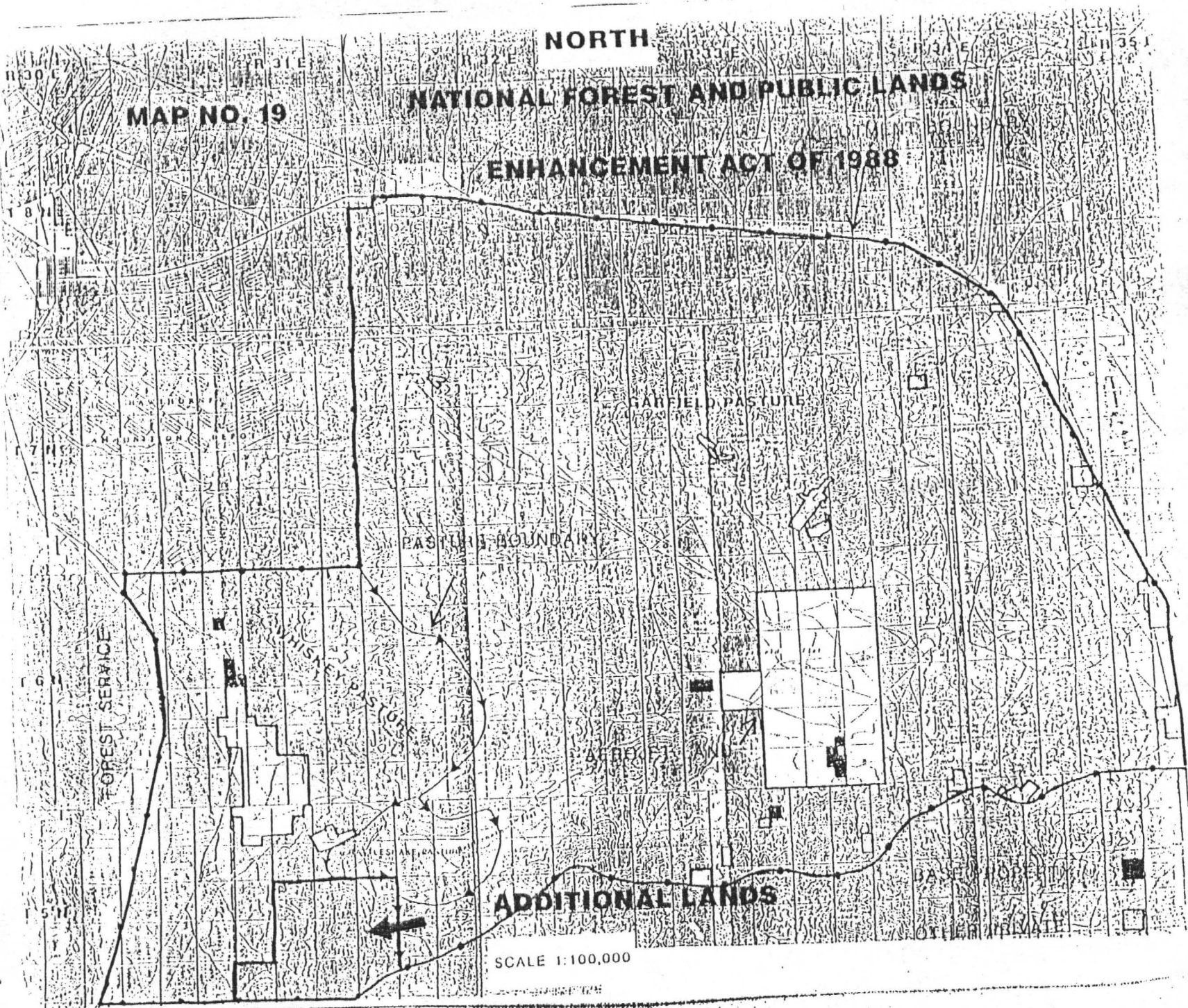


NORTH

MAP NO. 19

NATIONAL FOREST AND PUBLIC LANDS

ENHANCEMENT ACT OF 1988



SCALE 1:100,000

APPENDIX II

EXISTING AND ABANDONED RANGE IMPROVEMENTS GARFIELD FLAT ALLOTMENT

| <u>NUMBER</u> | <u>NAME</u> | <u>TOWNSHIP</u> | <u>RANGE</u> | <u>SECTION</u> | <u>SUBDIVISION</u> |
|---------------|------------------------------|-----------------|--------------|----------------|--------------------|
| 0384 | Rattlesnake Well | 5 North | 31 East | 01 | NESW |
| 0518 | Garfield Reservoir | 6 North | 33 East | 24 | NENE |
| 0519 | Garfield Reservoir #2 | 6 North | 33 East | 23 | SESE |
| 0520 | Garfield Reservoir #3 | 6 North | 33 East | 06 | SESW |
| 3521 | Douglas Pipeline | 6 North | 33 East | 35 | SESE |
| 4104 | Mable Mtn. Reaper | 7 North | 32 East | 27 | SESW |
| 4165 | Summit Spring Drift Fence | 5 North | 31 East | 25 | NWSW |
| 4351 | Mable Mtn. Reaper #2 | 7 North | 32 East | 25 | SESW |
| 4494 | Garfield Pipeline Lateral | 6 North | 33 East | 24 | SWNE |
| 5088 | East Rattlesnake Drift Fence | 5 North | 32 East | 04 | SESW |
| 5091 | Whiskey Flat Well | 5 North | 31 East | 19 | SWNE |
| 5092 | West Rattlesnake Drift Fence | 5 North | 31 East | 01 | NENE |
| 5130 | Pamlico Fence | 7 North | 32 East | 18 | NWNW |
| 5131 | Pamlico Cattleguard | 7 North | 32 East | 18 | NWNW |
| 5134 | Rattlesnake Cattleguard | 5 North | 31 East | 01 | SWNE |
| 5199 | Pepper Spring Pipeline | 5 North | 33 East | 01 | NENW |
| 6035 | Whiskey Flat Pipeline | 5 North | 31 East | 03 | SENE |
| 6253 | North Whiskey Flat Fence | 6 North | 31 East | 05 | NENW |
| 6254 | Douglas Pipeline Extension | 6 North | 34 East | 08 | SESE |
| 6261 | Douglas Cyn. Drift Fence | 6 North | 34 East | 22 | NENE |

*Garfield Flat Allotment
Photo Plot Summary Data and Interpretation*

APPENDIX III

1-1

1970 Compared to 1995

INSIDE: 1970 photos, very poor condition, two plants with vegetation, another root crown that is almost dead. Signs of wind erosion. 1995 shows a dramatic increase in perennial grasses (ricegrass) and winterfat. Definite upward trend. **PANORAMIC:** very startling contrast, such a visible increase in the vegetative component. Definite upward trend.

SUMMATION: *This plot is located in the Garfield Pasture and within the Herd Management Area. In 1995 the area was used by livestock during the early portion of the growing season. Adequate time was allowed for regrowth throughout a majority of the growing season (May and June). The same treatment is scheduled for this upcoming grazing year. The previous two years, livestock grazed this pasture beginning in the fall and continuing until 2/15 of the following year. From 1970 until 1992, the horses were using the area heavily throughout the entire growing season. Then for an unknown reason(s) the horses began utilizing the area at a much reduced rate. In fact, they seem to have left the area totally. The site is in a definite upward trend.*

1-2

1970 Compared to 1995

INSIDE: Winterfat is beat in 1970, in 1995 the plants have recovered, grasses are filling in. Definite improvement, upward trend. **PANORAMIC:** The area was hit hard in 1970, grasses were present but it appears that they have increased. Definite improvement in winterfat health and frequency. A lot of annual growth in 1995. Upward trend.

SUMMATION: *The same scenario has taken place at this plot that occurred at 1-1 but the results are not as dramatic, yet. This plot is located approximately 2.3 road miles to the west of plot 1-1. A large band of horses (65-70 on an average) have been using this area throughout the growing season. This use has been very concentrated, to the point of severe levels. They have an easy escape route into the Garfield Hills making this a highly desirable area of use. The range site has moderate potential and is a Silty 5-8" P.Z. range site. Again the horses have begun to shift use away from this area. In August of 1995 the area was able to recover to a point where seed production was possible. The site can still improve to a much greater extent than that shown in the 1995 photo.*

2-1

1970 Compared to 1995

INSIDE: It appears stable to slightly upward regarding the vegetation. 1970 photo shows shrubs, probably winterfat is dying. **PANORAMIC:** Grasses appear to be increasing, definitely more robust in 1995 picture. Shrub component is stable. It appears better ground cover now as opposed to 1970. Winterfat component appears to be improving. Overall this is considered to be an upward trend.

SUMMATION: *This plot is located approximately 1.6 miles north of Whiskey Spring. Essentially it appears that this plot has remained relatively stable over the years. The size and vigor of the grasses and shrubs has been cyclic, some years looking better than others. Since 1989 the site gives the appearance of moving in an upward direction in relation to trend. This plot is located just outside the Herd Management Area and is situated such that livestock do not tend to congregate in the area. IT SHOULD BE NOTED HERE THAT PRIOR TO THE REVISION OF THE ALLOTMENT MANAGEMENT PLAN, THE WHISKEY PASTURE WAS USED EXCLUSIVELY IN THE SPRING IN REGARD TO THE LIVESTOCK OPERATION.*

2-2

1970 Compared to 1995

INSIDE: Plants in 1970, poor vigor, small. In 1995 you have essentially the same number and location of plants, health has improved. Probably stable overall. **PANORAMIC:** Grasses are probably stable. Marked improvement in condition of winterfat. 1970 photo shows the area was pounded, appears to be sparse. 1995 appearance of more plants and the health is much improved. Upward trend.

SUMMATION: *This site has undergone an interesting change. In the 1977 photo you can easily distinguish squirreltail plants in the community. Over the years this component has been dramatically reduced. Ricegrass is now the dominant species, however there is still scattered squirreltail plants. The health of the winterfat has improved. Of concern is that it appear that the soil surface has become more gravelly which is indicative of overland flow (loss of soil). This alone would lead to a conclusion of downward trend. What is needed here is an improvement in the density of grasses and also their diversity. This site is just outside the Herd Management Area and is not a favored spot for livestock. In order to begin shifting this site to a higher production level, some sort of disturbance will be needed. IT SHOULD BE NOTED HERE THAT PRIOR TO THE REVISION OF THE ALLOTMENT MANAGEMENT PLAN, THE WHISKEY PASTURE WAS USED EXCLUSIVELY IN THE SPRING IN REGARD TO THE LIVESTOCK OPERATION.*

3-1

1970 Compared to 1995

INSIDE: In 1970 the ricegrass component was being removed. You can see three root crowns but very little vegetation. In 1995 there are five healthy ricegrass plants. In 1970 the winterfat plant had very

poor health, not very large. In 1995 you a tremendous growth, physical size of plant has increased. Upward trend. **PANORAMIC:** Grasses appear to have increased, although with amount of use in 1970, it could be deceiving. Winterfat was really being impacted. In 1995 winterfat is recovering, it appears to be increasing in community. Upward trend.

SUMMATION: *This plot is located in the Whiskey Pasture, south of the ranch, adjacent to the bottomlands. There is a pipeline located to the east of this site. PRIOR TO 1990 THE PASTURE WAS USED EXCLUSIVELY IN THE SPRING. From the early 70's until 1979, the site was only in fair condition. Plant vigor was not good. In 1979 it appears the site was really impacted, with only the crowns of the grasses remaining. From this point on there has been a gradual increase in health. Comparing 1970 with 1995, the site has gone upward in trend.*

3-2

1970 Compared to 1995

INSIDE: In 1970 three clumps of grasses, in 1995 there are none. In 1970, just outside, small ricegrass plant, 1995, huge ricegrass plant. In 1970 photo, small winterfat plant upper right had corner, 1995, much improved, large winterfat. Annuals inside in 1995. I would have to say inside the trend is downward. **PANORAMIC:** Grass component in declining, winterfat stable to slightly upward. Definite increase in size and vigor of plants. A lot of annual growth in 1995. Overall I would assess the trend as downward.

SUMMATION: *This site is located in the Whiskey Pasture and is approximately .15 miles south of the location for site 3-1. It went downward in trend from 1970 until 1985. Then it appears to have leveled off. There has been a slight improvement since 1989. Overall when comparing the 1970 photo to the 1995 photo, the trend has definitely been downward. We are starting to make a comeback with ELIMINATING THE CONTINUOUS SPRING USE.*

1-3, 1976 first year for this study.

1976 compared to 1995

INSIDE: It appears that there is a slight improvement between now and original photo.

PANORAMIC: The grasses and winterfat were being used during the growing season. It would appear that the grasses have increased in frequency, picture comparison could be deceiving.

SUMMATION: *This site is located in the Garfield Pasture. The trend between 1976 and 1983 was downward. Then in 1989 the trend appears to have stabilized with a gradual upward trend through 1995. Due to the increased vigor of the plants between 1976 and 1995, the trend is probably slightly upward.*

1-4, 1976 first year for this study.

1976 compared to 1995

INSIDE: There is a shift in location of the grasses but it appears to be stable. New grass plant on border of the frame. **PANORAMIC:** Shrubs have decreased in size, grasses appear to be more prevalent. Upward trend. Pretty dramatic comparison.

SUMMATION: *Between 1976 and 1995, there has been an upward shift in trend. Although grasses within the frame are not as prevalent, just outside of the frame the number of grass plants have increased, more so than the loss of plants within the frame.*

RS-1, 1976 is the first year for this study

1976 compared to 1995

INSIDE: In 1995 the sage plant is much larger. New ricegrass on the top of the photo. Other ricegrass plants present but not being use enough, oxidizing plant material is present. Overall, upward trend inside. **PANORAMIC:** Perhaps slight upward trend - we've just begun using (1995) Rattlesnake as a pasture so we can improve the condition.

SUMMATION: *This site is located in the Rattlesnake Holding Pasture. It is used when cattle are shifted between the Whiskey and Garfield Pastures. Up until 1994, this pasture would receive minimal use. There are certain areas that were favored by livestock (small patches of winterfat) while the majority of the pasture has a substantial population of decadent grass plants. Many of these plants are dying out in the centers. This pasture has very good potential but is currently dominated by mountain big sagebrush. It could definitely produce a greater variety of usable forage for all types of animals.*

RS-2, this is the first year for this study.

1976 compared to 1995

INSIDE and PANORAMIC: The vegetation appears to be stable but signs of surface erosion, gravel movement in the 1995 picture.

SUMMATION: *This site is located in the Rattlesnake Holding Pasture. It is used when cattle are shifted between the Whiskey and Garfield Pastures. Up until 1994, this pasture would receive minimal use. There are certain areas that were favored by livestock (small patches of winterfat) while the majority of the pasture has a substantial population of decadent grass plants. Many of these plants are dying out in the centers. This pasture has very good potential but is currently dominated by mountain big sagebrush. It could definitely produce a greater variety of usable forage for all types of animals.*

APPENDIX IV

Garfield Flat Herd Management Area (HMA) Potential Stocking Level Calculations

Shown below are the calculations used to derive the potential stocking level (AUMs) for wild horses in the Garfield Flat HMA. The forage utilization studies were completed after the growing season and before livestock turnout therefore the grazing use was by wild horses only. There are two separate use areas based on available water, Whiskey Springs and Pepper Springs. In determining the potential stocking level, these two use areas will be calculated separately. In the Whiskey Springs area the desired average utilization for wild horses will be 55% because all the forage is available to wild horses. In the Pepper Springs area the forage will be shared therefore the desired average utilization will be 27.5% for both wild horses and livestock.

Whiskey Springs Area

| Utilization Class | (X) Acres by Class | (Y) Class Midpoint | (X)*(Y) |
|-------------------|-----------------------|-----------------------|---------|
| Slight | 0 | 10 | 0 |
| Light | 750 | 30 | 22,500 |
| Moderate | 450 | 50 | 22,500 |
| Heavy | 4794 | 70 | 335,580 |
| Severe | 0 | 90 | 0 |
| Subtotals | 5,994 | | 380,580 |

$$\text{Average Utilization} = \frac{(X * Y)}{(X)} = \frac{380,580}{5,994} = 63.5\% \text{ - wild horse use only.}$$

$$\text{Actual Use} = 84 \text{ wild horses} * 12 \text{ months} = 1,008 \text{ AUMs}$$

$$\text{Desired Average Utilization} = 55\% \text{ (yearlong use by wild horses only, cattle rarely graze this area).}$$

Potential Stocking Level:

$$\frac{\text{Actual Use}}{\text{Average Util.}} = \frac{\text{Potential Stocking Level}}{\text{Desired Average Util.}}$$

$$\frac{1,008 \text{ AUMs}}{63.5\%} = \frac{\text{Potential Stocking Level}}{55\%}$$

$$\text{Potential Stocking Level} = 873 \text{ AUMs} = 73 \text{ wild horses yearlong.}$$

Pepper Springs Area

| Utilization Class | (X) Acres by Class | (Y) Class Midpoint | (X * Y) |
|-------------------|-----------------------|-----------------------|---------|
| Slight | 0 | 10 | 0 |
| Light | 7,256 | 30 | 217,680 |
| Moderate | 0 | 50 | 0 |
| Heavy | 3,317 | 70 | 232,190 |
| Severe | 0 | 90 | 0 |
| Subtotals | 10,573 | | 449,870 |

Average Utilization = $\frac{(X * Y)}{(X)} = \frac{449,870}{10,573} = 43.5\%$ - wild horse use only.

Actual Use = 82 wild horses * 12 months = 984 AUMs

Desired Average Utilization = 27.5% (forage in this area will be divided equally between livestock and wild horses - $55\%/2 = 27.5\%$).

Potential Stocking Level:

$\frac{\text{Actual Use}}{\text{Average Util.}} = \frac{\text{Potential Stocking Level}}{\text{Desired Average Util.}}$

$\frac{984 \text{ AUMs}}{43.5\%} = \frac{\text{Potential Stocking Level}}{27.5\%}$

Potential Stocking Level = 622 AUMs = 52 wild horses yearlong.

The combination of the potential stocking levels for both areas is 125 wild horses. This is the Appropriate Management Level (AML) for the Garfield Flat HMA.