m 6/20/86

IN REPLY REFER TO:

4120
(NV-027.11)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WINNEMUCCA DISTRICT OFFICE
705 East 4th Street
Winnemucca, Nevada 89445

June 20, 1986

Dawn Lappin
WHOA
P. O. Box 555
Reno, NV 89504

Dear Ms. Lappin:

Enclosed is a copy of the Blue Wing/Seven Troughs Allotment Management Plan. Please review and make any necessary comments. If you are unable to attend the Lovelock CRMP meeting of July 15-16, 1986, during which the plan will be discussed, please submit your comments to this office prior to the meeting date.

Sincerely yours,

Gerald Brandvold

Gerald P. Brandvold
Area Manager

Enclosure

BLUE WING-SEVEN TROUGHS

ALLOTMENT MANAGEMENT PLAN

U.S. Department of the Interior
Bureau of Land Management
Winnemucca District

Sonoma-Gerlach Resource Area

Blue Wing Planning Unit

Prepared by: Chris Mayer, Range Conservationist

Table of Contents

Blue Wing-Seven Troughs Allotment Management Plan

1. General Information

The AMP area is comprised of all or part of 11 mountain ranges: Kamma, Antelope, and Seven Troughs within the Seven Troughs Allotment, Selenite, Lava Beds, Antelope, Trinity, Blue Wing, Nightingale, Shawave, and Truckee within the Blue Wing Allotment. The ranges are typically separated by valley floors ranging from quite small (2-3 miles across) to extremely large (10-15 miles across) in size. The area is bordered on the north by the Western Pacific Railroad tracks and on the west by Highway 34 and the southeastern edge of the Pyramid Lake Indian Reservation boundary. The southern and eastern borders of the area are the respective allotment boundary lines.

The Blue Wing Allotment is approximately 66 miles long in a north-south direction and 26 miles wide in an east-west direction. The Seven Troughs Allotment is approximately 29 miles long in a north-south direction and 22 miles wide in an east-west direction.

a. Land Ownership Status

	Public	Other
Blue Wing	976,928	164,973
Seven Troughs	302,371	62,398
	1,279,299	227,371

The Blue Wing-Seven Troughs Allotments are within the Basin and Range physiographic province. The typical features of the area are the broad, flat valleys and north-south trending mountain ranges. Elevation varies from 3,800 feet on the desert floor to 8,200 feet in the mountain peaks. The climate is characteristic of the high, cold desert with highly variable precipitation patterns and extreme variations in temperatures. Precipitation ranges from 3.80 inches on the valley floor to 20"+ in the higher mountains. The average annual precipitation at Lovelock, Nevada, for a 72 year average is 5.78 inches. Seasonal temperatures range from below freezing to 100°+F. The average growing season is approximately 130 days from May to September. Vegetation of the region is adapted to limited moisture and wide temperature variations. The area supports desert shrub vegetation. See Appendix for range sites and soil types in the area.

b. Historical Grazing Use

Grazing privileges were established during the Class I priority period. Active grazing preference in the Blue Wing Allotment is 24,329 AUMs and in Seven Troughs Allotment is 9,523 AUMs. The grazing preference in both allotments is attached to land base properties. Grazing preferences or qualifications are attached to fenced base properties and/or unfenced private lands or parallel bases. Grazing preference in both allotments was adjudicated on the basis of dual use for cattle and domestic sheep. There are presently seven operators in the two allotments. C-Punch Corporation is the only cattle operation in the Blue Wing Allotment. C-Punch Corp. also runs cattle in the Seven Troughs Allotment in common with Tim DeLong and DeLong Ranches, Inc. C-Punch is a cow-calf operation running yearlong on the public lands. The sheep operators include B. G. Bunyard, Wes Cook, John Espil, and Dufurrena

Sheep Co. All sheep permittees operate as winter season-of-use. B. G. Bunyard and Wes Cook are authorized use in the Blue Wing Allotment. John Espil and Dufurrena Sheep Co. are authorized use in the Seven Troughs Allotment.

The base property requirements for Blue Wing Allotment is two months and Seven Troughs Allotment is four months. However, the base property requirements as established during the 1960 adjudications have not been enforced.

The Blue Wing Allotment was used for the grazing of cattle and sheep before the adjudication process. The period-of-use was yearlong grazing in common for all types of livestock as per customary use. The adjudication of the Blue Wing grazing unit was February 10, 1966, by Notice of Advisory Board recommendation and Decision of the District Manager. At the time of adjudication there was no reduction imposed on the base property qualifications in order to reach the grazing capacity of the federal range. There have been no subsequent changes in the grazing capacity of the Blue Wing Allotment. The Blue Wing Allotment was formed out of the Blue Wing grazing unit.

2. Existing Information

a. Livestock Qualifications

(1) Blue Wing Allotment Livestock Qualifications

Active grazing preference in the Blue Wing Allotment is 24,329 AUMs. There are currently three operators in the Blue Wing Allotment. C-Punch Corporation is the only cattle operator. B. G. Bunyard and Wes Cook are sheep operators with a winter season-of-use.

Operator	Grazing Record Number	Preference			Kind of Livestock	Period		% Federal Range
		Total	Suspended	Active		From	To	
C-Punch Corp.	2016	21,460	0	21,460	Cattle	3/1	- 2/28	80%*
B.G. Bunyard	2008	1,505	0	1,505	Sheep	12/15	- 3/15	100%
Wesley L.Cook	2017	1,470	106	1,364	Sheep	12/7	- 3/17	100%

* C-Punch Corp. exchange-of-use:

21,460 AUMs Federal Range = 80%
5,349 AUMs Exchange-of-use = 20%
26,809 AUMs Total

(2) Seven Troughs Allotment Livestock Qualifications

Active grazing preference in the Seven Troughs Allotment is 9,523 AUMs. There are currently five operators in Seven Troughs Allotment.

Operator	Grazing Record Number	Preference Total	Suspended	Active	Kind of Livestock	Period From	To	% Federal Range
C-Punch Corp.	2016	4,404	0	4,404	Cattle	3/1 -	2/28	*92%
John Espil	2032	3,627	0	3,627	Sheep	12/1 -	3/15	100%
Dufurrena Sheep Co.	2146	746	0	746	Sheep	11/1 -	3/31	*67%
Dufurrena Sheep Co.	2146	373	Exchange-of-Use		Sheep	11/1 -	3/31	*33%
DeLong Ranches Inc.	2115	746	0	746	Cattle	11/1 -	3/31	*67%
DeLong Ranches Inc.	2115	373	Exchange-of-use		Cattle	11/1 -	3/31	*33%
DeLong Ranches Inc.	2115	226	Exchange-of-use		Cattle	11/1 -	3/31	100%
Tim DeLong	2046	895	Exchange-of-use		Cattle	11/1 -	6/31	100%

* C-Punch Corp. exchange-of-use:

4,460 AUMs Federal Range = 92%
399 AUMs Exchange-of-use = 8%
4,859 AUMs Total

* Dufurrena Sheep Co. exchange-of-use:

746 AUMs Federal Range = 67%
373 AUMs Exchange-of-use = 33%
1,119 AUMs Total

* DeLong Ranches Inc. exchange-of-use

746 AUMs Parallel Base Federal Range = 67%
373 AUMs Exchange-of-use = 33%
226 AUMs Exhange-of-use SPL-3266 = 100%

b. Wildlife Reasonable Numbers

(1) Seven Troughs Allotment

Antelope - 12 total reasonable numbers - potential introduction areas

	Seasonal Use Area	Seasonal Reasonable Numbers	AUMs	Total
West of Rye Patch	AY-1(12)	2	4	
East of Seven Troughs Range	AY-3(12)	9	22	26

Mule Deer - 165 total reasonable numbers

	Seasonal Use Area	Seasonal Reasonable Numbers	AUMs	Total
Seven Troughs Range	DS-2 (6)	82	123	
Seven Troughs Range	DY-5 (12)	114	342	
Kamma Mountains	DY-6 (12)	5	15	
Antelope Range	DY-7a (12)	3	10	
Majuba Mountains	DY-7b (12)	2	5	495

AY - antelope yearlong; DS - muledeer summer; DY - muledeer yearlong; BY - bighorn sheep yearlong

Bighorn Sheep - no reintroductions planned

(2) Blue Wing Allotment

Antelope - 20 total reasonable numbers - potential introduction areas

	Seasonal Use Area	Seasonal Reasonable Numbers	AUMs	Total
E. of Seven Troughs Range	AY-3 (12)	1	1	
W. of Seven Troughs Range	AY-2 (12)	20	48	49

Mule Deer - 234 total reasonable number

	Seasonal Use Area	Seasonal Reasonable Numbers	AUMs	Total
Selenite Range	DS-1 (6)	79	119	
Selenite Range	DY-1 (12)	120	360	
Nightingale Range	DY-2 (12)	6	18	
Shawave Range	DY-3 (12)	27	81	
Lava Beds	DY-4 (12)	26	78	
Seven Troughs Range	DY-5 (12)	12	36	
Trinity Range	DY-8a (12)	2	6	
Trinity Range	DY-8b (12)	1	3	701

Bighorn Sheep - 44 total reasonable number - no bighorns present - potential reintroduction area - Selenite Range

	Seasonal Use Area	Seasonal Reasonable Numbers	AUMs	Total
Selenite Range	BY-1 (12)	44	106	106

The north end of the Shawave Range has been identified for possible bighorn sheep reintroduction by the Nevada Department of Wildlife. No reasonable numbers have been determined for this area.

c. Wild Horses and Burros

Appropriate Management Levels (AMLs), as agreed to by the Lovelock CRMP Subcommittee for the public land on the Blue Wing and Seven Troughs Allotments, are 877 wild horses and 143 wild burros. This management level is thought to be compatible with the livestock operation as planned, wildlife demand, and the available resources on the noncheckerboard lands in the planning area. All excess animals over and above this management number will be removed. See Blue Wing-Seven Troughs Herd Management Area Plan for further details.

It is proposed to reach AML in the planning area by 1986. The management subunits, number of animals, and AUM demand in the planning area are as follows:

Management Subunits	Number of Animals	AUM Demand
Antelope	0	0
Lava Beds/Seven Troughs/Kamma Mtns.	640 Wild horses 104 Burros	7,680 AUMs 1,248 AUMs
Selenite Range	0	0
Blue Wing Mountain/ Nightingale Mountain/Shawaves	237 Wild horses 39 Burros	2,844 AUMs 468 AUMs
Truckee Range	0	0
TOTALS	877 Wild horses 143 Burros 1,020	10,524 Wild horses 1,716 Burros 12,240 AUMs

Current numbers in the planning unit as of September 16, 1985, by Herd Use Area (HUA) are:

	Wild Horses	Burros	Mules
Seven Troughs HUA	66	105	0
Kamma Mountain HUA	45	0	1
Lava Beds HUA	1,057	40	0
Selenites HUA	24	1	0
Blue Wing Mountain HUA	52	49	0
Shawave Mountain HUA	180	0	0
Nightingale HUA	174	0	0
Truckee Range HUA	82	0	0
Antelope Range HUA	285	3	0
TOTAL	1,965	198	1

d. Threatened and Endangered Species

As in accordance with a memorandum dated May 3, 1984, an update of the District Sensitive Plant List indicates there are no threatened, endangered, or watch plant species listed within the AMP area. Several plant species fall under the "Other Rare" category which includes rare plants not considered to be under any threat. There are no known threatened or endangered wildlife in the AMP area.

e. Wilderness Study Areas (WSAs)

There are two WSAs located entirely within this plan, Selenites and Mount Limbo. There would be no anticipated impacts to the present wilderness values resulting from implementation of this plan. There are no proposed increases in livestock numbers.

f. Baseline Data

An order 3 soil survey and vegetation mapping is currently being done in the AMP area. When inventory of this baseline data is completed, it will be tabulated and incorporated into this plan. Baseline data has been collected and established at the rangeland monitoring key area locations. The estimated ecological status in the AMP area as based on the Blue Wing and Seven Troughs Step III URA are as follows:

	Blue Wing	Seven Troughs
Potential Natural Community (PNC)	1%	5%
Late Seral	20%	15%
Mid Seral	38%	35%
Early Seral	40%	45%

g. Issues and Conflicts

The issues and conflicts identified here are derived from the Blue Wing-Seven Troughs CRMP Plan.

Approximately 41% of the public lands in the planning area is estimated to be in early seral ecological status and approximately 37% of the area is in mid seral ecological status (1979 estimate).

Approximately 39% of the public lands in the planning area is estimated to be in a downward trend (1979 estimate).

The level or intensity of present grazing management is not satisfactory (i.e., area-of-use, season-of-use, distribution, salting, etc.)

All but one of the licensed livestock permittees are operating under their active preference.

Sheep operators would like to expand their present areas-of-use.

Existing rangeland improvements are inadequate.

Unauthorized livestock drift from adjacent allotments is not manageable.

The population of wild horses/burros is currently in excess of management numbers on checkerboard and noncheckerboard lands, and is contributing to the deterioration of the rangeland/habitat.

A program to monitor and evaluate changes in rangeland/habitat condition in relation to management practices was not available for the planning area.

Crucial wildlife habitat above the 5,000 foot elevation is in less than desirable condition.

Sage grouse populations appear to be reduced by meadow deterioration and by access of off-road vehicles to ridgetops and brooding areas during crucial periods.

The wetland condition is deteriorating around springs and seeps in the planning area.

h. Phenological Data

Table I. Phenology.

Blue Wing Allotment

Species	DEVELOPMENT STAGES Start Growth	Flowering	Peak of Flowering	Seedripe	Seed Disseminate
Grasses:					
STTH2	3/15-3/30	5/15-5/30	6/ 1-6/15	6/15-6/30	6/30-7/15
ORHY	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
POA++	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
SIHY	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
FEID	3/15-3/30	5/15-5/30	6/01-6/15	6/15-6/30	7/01-6/15
AGSP	5/01-5/30	6/01-6/15	6/15-6/30	6/30-7/15	7/15-7/30
Forbs:					
BASA3	4/15-4/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
CRAC2	4/15-4/30	5/15-5/30	6/01-6/15	6/01-6//15	6/15-6/30
SPHAE	4/15-4/30	5/15-5/30	5/15-5/30	6/01-6/15	6/15-6/30
Shrubs:					
PUTR2	3/15-3/30	5/15-5/30	6/01-6/15	7/01-7/15	7/15-7/30

Seven Troughs Allotment

Species	DEVELOPMENT STAGES Start Growth	Flowering	Peak of Flowering	Seedripe	Seed Disseminate
Grasses:					
STTH2	3/15-3/30	5/15-5/30	6/ 1-6/15	6/15-6/30	6/30-7/15
ORHY	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
POA++	3/15-3/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
SIHY	3/15-3/30	5/01/5/15	5/15-5/30	6/01/6/15	6/15-6/30
Forbs:					
BAHO	4/15-4/30	5/01-5/15	5/15-5/30	6/01-6/15	6/15-6/30
SPHAE	4/15-4/30	5/15-5/30	5/15-5/30	6/01-6/15	6/15-6/30
Shrubs:					
EULA5	3/15-3/30	5/15-5/30	6/01-6/15	6/15-6/30	7/01-7/30

This phenological data was obtained from reference to the Sonoma-Gerlach Environmental Impact Statement. Phenology study data was collected in cooperations with Natural Resource Consultants during the period 1976-1979.

3. Public Participation and Interdisciplinary Approach

The planning and development of this AMP was completed through consultation, cooperation, and coordination with the Lovelock CRMP group. This group was organized at a public meeting held on September 16, 1981, in Lovelock, Nevada. A multidisciplinary approach was taken towards the identification of allotment issues, conflicts, problems, and objectives which are identified in the Blue Wing-Seven Troughs Coordinated Resource Management Plan. This plan was approved on July 24, 1984, by the Lovelock CRMP group. Continued involvement by the CRMP group during implementation and evaluation of this AMP will be sought to assure accomplishment of goals and objectives. The CRMP plan may be located in the District files.

4. Management Objectives

a. General Allotment Management Objectives

Manage domestic livestock grazing to increase 136,318 acres from early and mid seral to late seral, and 3,505 acres from late seral to PNC ecological status; improve range condition and forage availability, to reach and sustain 33,852 AUMs of active preference for livestock grazing.

Maintain a viable population of wild horses/burros in the planning area.

Maintain or improve the condition of wildlife habitat to accommodate the needs of all species of wildlife presently or potentially using the planning area.

Protect and enhance the water quality, quantity, and wetland characteristics of selected springs in the planning area.

Control unauthorized livestock drift from adjacent allotments.

Maintain the integrity of the Wilderness Study Areas.

Monitor the resources for attainment of management goals.

b. Key Management Area Objectives

See attached Table II.

Table II. Key Management Area Objectives

Key Area Number	Key 1/ Species	Allowable Use 2/ Levels	Desired Ecological 3/ Status	Interim (5 years) Frequency 4/ Trend	Short Term (10 years) Frequency Trend	Short Term (10 years) Ecological Status 4/ Objectives	Long Term (35 years) Frequency Trend	Long Term (35 years) Ecological Status Objectives
134-0001	SIHY STTH2 EULA5	40 40 50	Late Seral to PNC	Static (if ORHY or EULA5 appear in frequency study, reevaluate objectives).	Same as interim	Maintain current composition of SIHY and STTH2; if ORHY ever appears on site (should be present) or when EULA5 increases to 1% of plant composition, reevaluate objectives	Same as interim	Same as short term
134-0002	ORHY SIHY	50 40	Late Seral to PNC	Upward (show increase in ORHY)	Same as interim	Maintain current composition of SIHY; increase ORHY to at least 5%	Same as interim	Maintain current composition of SIHY; increase ORHY to at least 10%
134-0003	STTH2 SIHY POA++	40 40 50	Late Seral	Static (show no decrease in key species)	Same as interim	Maintain current composition of key species & at least 10% total perennial forb composition	Same as interim	Same as short term
134-0004	SIHY STTH2 POA++ BAHO	40 40 50 5	Late Seral	Upward (show increase of SIHY, STTH2, POA++, and native forbs)	Same as interim	Increase SIHY & STTH2 to 5% each; increase POA++ to 8%	Same as interim	Maintain SIHY at 5%; increase STTH2 to 10% & POA++ to 15%
134-0005	SIHY ORHY SPHAER	40 50 15	Late Seral	Upward (show increase in SIHY)	Same as interim	Increase SIHY to 40%; if ORHY increases to 1%, reevaluate objectives	Static (show no decrease in key species)	Maintain SIHY at 10%; if ORHY increases to 1%, reevaluate objectives
134-0006	SIHY POA++ STTH2	40 50 40	Late Seral	Upward (show increase in STTH2, POA++, and SIHY.		Increase SIHY to at least 5%; increase STTH2 and POA++ to at least 5%.	Upward (show no decrease in SIHY; show an increase in STTH2 and POA++).	Maintain SIHY at 5%; increase POA++ and STTH2 to at least 10%.

Table II. Key Management Area Objectives
(Continued)

Key Area Number	Key Species 1/	Allowable Use 2/ Levels	Desired Ecological Status 3/	Interim (5 years) Frequency Trend 4/	Short Term (10 years) Frequency Trend	Short Term (10 years) Ecological Status Objectives 4/	Long Term (35 years) Frequency Trend	Long Term (35 years) Ecological Status Objectives
135-0001	SIHY STTH2 POA++ FEID	40 40 50 40	Late Seral	Upward (show increase in STTH2; show no decrease in SIHY & POA++)	Same as interim	Increase STTH2 to at least 5%; if FEID increases to 1%, re-evaluate objectives; maintain current % of SIHY and POA++	Same as interim	Increase STTH2 to at least 10%; maintain current % of SIHY and POA++; increase total perennial forbs to 10%
135-0002	SIHY STTH2 POA++ BASA3 CRAC2	40 40 50 30 50	Late Seral	Upward (show increase in STTH2; show no decrease in SIHY & POA++)	Same as interim	Increase STTH2 to at least 9%; maintain current level of SIHY and POA++; increase total perennial forbs to 10%	Same as interim	Increase STTH2 to at least 15%; maintain short term levels of forbs, SIHY, and POA++
135-0003	SIHY STTH2 POA++ ORHY BASA	40 40 50 50 30	Late Seral	Upward (show increase in STTH2; show no decreases in other key species)	Same as interim	Increase STTH2 to at least 6%; maintain levels of other key species	Same as interim	Increase STTH2 to at least 10%; maintain levels of other key species; increase total perennial forbs to at least 10%
135-0004	ORHY	50	Late Seral	Upward (show increase in ORHY)	Same as interim	Increase ORHY to at least 3%; if other perennial forage grasses appear, re-evaluate objectives	Same as interim	Increase ORHY to at least 8%
135-0005	POA++ SIHY	50 40	Late Seral	Upward (show an increase in SIHY and POA++; show an increase of perennial forbs)	Same as interim	Increase SIHY to at least 5% and POA++ to 8%; if STTH2 appears, reevaluate objectives	Upward (show an increase in POA++ and perennial forbs; show no decrease in SIHY)	Increase POA++ to at least 14% and perennial forbs to at least 10%; maintain SIHY at no less than 5%

Table II. Key Management Area Objectives
(Continued)

Key Area Number	Key 1/ Species	Allowable Use 2/ Levels	Desired Ecological 3/ Status	Interim (5 years) Frequency 4/ Trend	Short Term (10 years) Frequency Trend	Short Term (10 years) Ecological Status 4/ Objectives	Long Term (35 years) Frequency Trend	Long Term (35 years) Ecological Status Objectives
135-0007	AGSP STTH2 PUTR2 BASA	50 40 50 30	Late Seral	Upward (show increase in AGSP & STTH2; show no decrease in PUTR2)	Same as interim	Maintain PUTR2 at 20%; increase AGSP, STTH2, & perennial forbs (other than BASA3) to 5%.	Same as interim	Maintain PUTR2 at 20%; increase AGSP, STTH2, & perennial forbs (other than BASA3) to 10%.
135-0008	SIHY STTH2 POA++	40 40 50	Late Seral	Upward (show increase in SIHY, STTH2, & POA++, and perennial forbs)	Same as interim	Increase SIHY, STTH2, & POA++ to 5%; increase perennial forbs to 7%.	Same as interim	Increase SIHY, POA++, & STTH2 to 5%; increase perennial forbs to 10%.
135-0010	ORHY SIHY EULA5 SPHAER	50 40 50 15	Late Seral	Static (show no decreases in key species)	Same as interim	Maintain current ecological status	Same as interim	Same as short term
135-0011	ORHY EULA5	50 50	Late Seral	Static (show no decrease in key species)	Same as interim	Maintain current ecological status; if more perennial forage species appears, reevaluate objectives	Same as interim	Same as short term
135-0012	SIHY STTH2	40 40		Utilization Study Only				

1/ Plant codes are used here base on SCS 1982. These codes are identified in the Plant List (Appendix 2).

2/ Allowable use levels are the objectives established for utilization. They are derived from the Sonoma-Gerlach Grazing Environmental Impact Statement, pp. 1-7.

3/ This is the Seral stage that would have the greatest value for all resources (livestock, wild horses/burros, game species of wildlife).

4/ Frequency identified as static or upward. If an important forage plant species appears on a study that previously was not recorded, then all monitoring objectives for that key area should be reevaluated.

5. Grazing Practices

Domestic livestock grazing will be managed to increase 136,318 acres from early and mid seral to late seral, and 3,505 acres from late seral to PNC ecological status; improve range condition and forage availability, to reach and sustain 33,852 AUMs of active preference for livestock grazing as follows:

	Blue Wing Allotment	Seven Troughs Allotment
C-Punch Corp.	21,460 AUMs	4,404 AUMs
B. G. Bunyard	1,505 AUMs	
Wesley Cook	1,364 AUMs	
Dufurrena Sheep Co.		746 AUMs
Dufurrena Sheep Co.		373 AUMs (E/U)
DeLong Ranches Inc.		746 AUMs
DeLong Ranches Inc.		373 AUMs (E/U)
DeLong Ranches Inc.		226 AUMs (E/U)
Tim DeLong		895 AUMs (E/U)
John Espil		3,627 AUMs
TOTAL	24,329 AUMs	9,523 AUMs
		1,867 AUMs (E/U)

Livestock grazing in the Blue Wing and Seven Troughs Allotments will continue as winter sheep use and yearlong cattle use. See livestock use area map for specific location. Sheep use will continue in each respective area-of-use every year. C-Punch cattle will be under a seasonal rotation grazing system.

a. Normal Operation

(1) C-Punch Corporation Normal Operation

Allotment	Preference			Number and Kind of Livestock	Period		% Federal Range
	Total	Suspended	Active		From	To	
Blue Wing	21,460	0	21,460	1788 cattle	3/1	- 2/28	80%
Seven Troughs	4,404	0	4,404	367 cattle	3/1	- 2/28	92%

C-Punch Corporation has developed a grazing management plan which includes modification to seasons and areas-of-use. C-Punch will be under a seasonal rotation grazing system. The Blue Wing-Seven Troughs planning area has been subdivided into seasonal units which will allow grazing one unit followed by another in regular succession. The seasonal rotation system will continue every year in the same rotational order. Full implementation of the system depends upon construction of range improvements listed in Table V. C-Punch Corporation has an area for exchange-of-use located in the southern portion of the Seven Troughs Allotment. Refer to Map 1 for seasonal units and exchange-of-use lands. They will continue as a cow-calf operation.

Proposed Grazing System

Graze 150-200 head of livestock in the Slough House area above Nixon during the winter season-of-use (11/1-3/31). At the beginning of plant growth of the key species cattle will be moved north and held on the west side of the Selenite Range from 4/1-10/31. This will allow for rest of key species in Slough House during the critical growing period and also allow improved vigor, production and storage of nutrients, and seed production. Grazing in the Selenite Range occurs when the forage is most nutritious and when weight gains per day are highest.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	10/31	11/1	12/1	1/1	2/1	3/1	3/31
Slough House Area		Critical Growth Rest Period							Graze					
West Side of Selenite Range		Graze							Rest Period					

Livestock management techniques will be the principal tool for resource management. Water control and riding will be the method of controlling livestock distribution and drift, season-of-use, and intensity of grazing.

Waters that will be shut down in the Slough House area after livestock have been moved are:

Existing: Little Valley Well
Proposed: Nixon Flat Well

Mineral supplements may also be used to control livestock distribution and prevent drift out of units. In the Selenite unit, the Highway 34 fence and the Selenite Range provide control to the east and west. In the Slough House area, the Desert Queen fence and Highway 34 fence provide control to the south. Livestock will be trailed between management units. Water will be hauled to a point along the reservation fence approximately half way down the west side of Winnemucca Lake where cattle will be held overnight. In the Slough House unit Nixon Flat and Little Valley Wells will be shut down upon movement north. Trailing of cattle between units will take about three days.

Graze 550-600 head of livestock in the Granite Springs Valley during the winter season-of-use (11/1-3/31) where during the start of growth of the key species, the livestock will be moved to the Nightingale and Shawave Mountains from 4/1-10/31 (see attached map). This will allow for rest of the key species in Granite Springs Valley during the critical growth period. Grazing in the Nightingale and Shawave Mountains unit will occur when the forage is most nutritious and when weight gains are highest.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	10/31	11/1	12/1	1/1	2/1	3/1	3/31
Granite Springs Valley	Critical Growth Rest Period									Graze				
Nightingale Shawave Mountains	Graze								Rest Period					

Water control and riding will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. At the end of each season-of-use, waters will be shutdown and cattle will then drift into the other adjacent unit. West Ragged Top Well #1 and Telephone Well are the major watering sources in the Granite Springs Valley and they will be shut down after the livestock leave. Once Hard to Find Well and Lowry Well are constructed, they will also be shut off. The depth of the snow in the Nightingales and Shawaves is sufficient to force the livestock into Granite Springs Valley.

Mineral supplements may also be used to control livestock distribution and to prevent drift into other units. Control of livestock will also be accomplished by riding.

Graze 250-300 head of livestock on the flats between the Selenites and the Lava Beds during the winter season-of-use (11/1-3/31). When growth of the key species begins, cattle will be moved west and held on the east side of the Selenite Range from 4/1-10/31 (see attached map). This will allow for rest of key species in the flats during the critical growing period and allow for growth of winter grazing species for the next season. Grazing in the East Selenites occurs when the forage is most nutritious and promotes the highest weight gains per day.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	10/31	11/1	12/1	1/1	2/1	3/1	3/31
Flats between Selenites and Lava Beds	Critical Growth Rest Period									Graze				
East Selenites	Graze								Rest Period					

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. Livestock will be rotated and distributed by shutting down waters for distribution both within and out of each grazing unit.

Waters in the area which may be shutdown are:

Limbo Well
Lower end of Betty Creek and C Punch pipelines
Desert Well
Twin Buttes Well

Graze 350-400 head of livestock in the Kamma Mountains and Antelope Range during the winter season-of-use (11/1-3/31). At the start of growth cattle will be moved into the Seven Troughs Range and held from 4/1-10/31 (see attached Map #1). This will allow for growth of winter grazing species for the next season. Grazing will occur in the Seven Troughs Range when forage is most nutritious and weight gains are highest.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	10/31	11/1	12/1	1/1	2/1	3/1	3/31
Kamma Mountains Antelope Range		Critical Growth Rest Period							Graze					
Seven Troughs Range		Graze							Rest Period					

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing. Livestock will be rotated and distributed primarily by shutting down waters for distribution both within grazing units and controlled drift out of grazing units.

Waters (once constructed) to be controlled are:

Antelope Siding Well
Toll Rock Canyon Well
Rocky Canyon Well
Long Walk Well (existing)

Graze 350-400 head of livestock in the Lava Beds, Blue Wing Mountains, and western slopes of the Seven Troughs Range on a rotating basis throughout the year depending on weather and forage conditions (refer to Map #1).

Water control, riding, and salting will be the methods of controlling livestock distribution and drift, season-of-use, and intensity of grazing.

Waters (once constructed) in the area are:

Trail Canyon Well
Twin Butte Well (existing)

Benefits: The ecological status of the native vegetation and watershed resources will improve. The quantity, quality, and diversity of vegetation should be improved. Competition for available forage and habitat should decrease among sheep, cattle, wild horses-burros, and wildlife. Over the long term this (combined with other actions planned to achieve this objective) should allow C-Punch Corp. and the other livestock permittees to graze at 100% of their active preference.

(2) DeLong Ranches Inc. Normal Operation

Allotment	Preference Total	Preference Suspended	Preference Active	Number and Kind of Livestock	Period From	Period To	% Federal Range
Seven Troughs*	*746	0	746	223 cattle	11/1	3/31	67%
Seven Troughs**	**226	Exchange-of-Use		45 cattle	11/1	3/31	100%

* This preference is attached to Southern Pacific Grazing Lease SPL-4423A as an undivided half interest with Dufurrena Sheep Company, 373 AUMs Exchange-of-Use.
** This preference is attached to SPL-3266. This lease land is offered as exchange-of-use.

DeLong Ranches Inc. shall operate within the grazing system in the Seven Troughs Allotment. They will operate within the Dufurrena adjudicated area-of-use. Refer to Map #1 for the Dufurrena adjudicated area-of-use and the exchange-of-use lands.

Within the Dufurrena use area, which includes the Kamma Mountains, Antelope Range, and the northwest corner of the Seven Troughs Range, grazing will continue each year as winter use (11/1-3/31). During the start of growth of the key species the livestock will be moved out of the allotment. This will allow for rest and growth of winter grazing species for the next season.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	1/1	2/1	3/1	3/31
Kamma Mountains Antelope Range		Critical Growth Rest Period							Graze				
Seven Troughs Range Northwest Corner		Critical Growth Rest Period							Graze				

Benefits: This should provide for the best utilization of the perennial vegetation and should improve the overall ecological condition in the Seven Troughs Allotment.

(3) Tim Delong

Allotment	Exchange-of-Use	Number & Kind of Livestock	Period From	Period To	% Federal Range
Seven Troughs	895	112 cattle	11/1	6/30	100%

Livestock grazing use will occur in the former Tharalson and Duncan area for exchange-of-use within the Seven Troughs Allotment. Southern Pacific Grazing Lease SPL-6431 is offered for exchange-of-use. Refer to Map #1 for the Tharalson and Duncan area for exchange-of-use. Grazing use will continue each year for the period (11/1 - 6/30).

	4/1	5/1	6/1	6/30	7/1	8/1	9/1	10/1	11/1	12/1	1/1	2/1	3/1
SPL-6431 Area for Exchange-of-use			Graze				Rest Period					Graze	

Benefits: Cattle will be moved out of the allotment after seed dissemination of the majority of the plants. This will allow for trampling and covering of the seed, and also provide fall growth prior to late fall grazing.

(4) Dufurrena Sheep Co. Normal Operation

Allotment	Preference			Kind of	Period		% Federal
	Total	Suspended	Active	Livestock	From	To	Range
Seven Troughs	746	0	746	sheep	11/1	- 3/31	67%

The sheep operation of Dufurrena Sheep Co. will be managed as in the past in accordance with the adjudicated area and season-of-use. Refer to Map #1 for the adjudicated area-of-use and the area for exchange-of-use. The active preference shall change from 1,492 AUMs to 746 AUMs. This reflects the undivided 1/2 interest with DeLong Ranches Inc. Sheep grazing will continue during the winter season (11/1-3/31) in the northern portion of the Seven Troughs Allotment occurring in the Kamma Mountains, Seven Troughs, and Antelope Range. During the start of growth of the key species sheep will be trailed out of the allotment. This will allow for rest during the critical growing period, growth of winter grazing species, improved vigor, production and storage of nutrients, and seed production.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	1/1	2/1	3/1	3/31
Kamma Mountains & Antelope Range		Critical Growth Rest Period							Graze				

Benefits: This should provide for the best utilization of the perennial vegetation and should improve the overall ecological condition in the Seven Troughs Allotment.

(5) John Espil Normal Operation

Allotment	Preference			Kind of	Period		% Federal
	Total	Suspended	Active	Livestock	From	To	Range
Seven Troughs	3,627	0	3,627	sheep	12/1	- 3/15	100%

The grazing management system for John Espil will not change from past use, continuing as winter season-of-use and an active preference of 3,627 AUMs. The area-of-use shall continue as adjudicated in the south half of the Seven Troughs Allotment. Refer to Map #1 for location of use area.

Graze 2,000 head of sheep in the southern portion of the Seven Troughs Allotment during the winter season 12/1-3/15. This treatment allows for grazing during the dormancy period when plants are least susceptible to the impacts of grazing; sheep will be removed prior to the critical growth period. This allows for rest during the critical growth period providing plant growth, improved vigor, production and storage of nutrients, and seed production.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	1/1	2/1	3/1	3/15
Seven Troughs Range	Critical Growth Rest Period									Graze			

Sheep are trailed from Lovelock in the fall, to the Seven Troughs Allotment, and in the spring are trailed to the Calneva unit of the Susanville District. Refer to each individual grazing license for a detailed trailing description.

Benefits: This grazing system should provide for the best utilization of the perennial vegetation and should improve the overall ecological condition in the Seven Troughs Allotment.

(6) B. G. Bunyard Normal Operation

Allotment	Preference Total	Suspended	Active	Kind of Livestock	Period From	To	% Federal Range
Blue Wing	1,505	0	1,505	sheep	12/15-	3/15	100%

Bob Bunyard's area-of-use will expand to include the old Holland sheep use area and will be shared in part with Wes Cook. Refer to Map 1 for the adjudicated area-of-use and the expanded area-of-use. The winter season-of-use and active preference shall remain unchanged.

Graze 1,800 head of sheep to include the expanded area-of-use during the winter season (12/15-3/15). This treatment allows for grazing forage during the dormancy period when plants are least susceptible to the impacts of grazing. During the start of growth of particularly the key species the livestock will be trailed out of the area. This treatment allows for rest during the critical growth period providing plant growth, improved vigor, production and storage of nutrients, and seed production.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	1/1	2/1	3/1	3/15
Pahsupp Mountain Adjudicated Area-of-use		Critical Growth Rest Period									Graze		
The Lava Beds Former Holland Area-of-use		Critical Growth Rest Period									Graze		

The trailing of sheep is from High Rock Canyon to the Blue Wing area-of-use ~~to High Rock Canyon~~ between 12/7 and 12/15 and back between 3/16 and 3/30. Refer to each grazing license for a detailed description for trailing stipulations.

Benefits: The expanded area-of-use will alleviate repeated concentrated grazing use on the smaller original adjudicated area-of-use. This action will also provide the permittee an opportunity to be more flexible in his operation by allowing him to follow the localized snowstorms thus eliminating the need to haul water. This will help to improve the overall ecological condition in the Dry Mountain area.

(7) Wesley Cook Normal Operation

Allotment	Preference			Kind of Livestock	Period		% Federal Range
	Total	Suspended	Active		From	To	
Blue Wing	1,470	106	1,364	sheep	12/7	3/17	100%

Wes Cook's adjudicated area-of-use will expand to include the old Holland sheep use area and will be shared in part with B. G. Bunyard. Refer to Map 1 for adjudicated area-of-use and the expanded area-of-use. The winter season-of-use and active preference shall remain unchanged.

Graze 2,000 head of sheep in the two areas-of-use during the winter season (12/7-3/17). This allows for grazing during the dormancy period when plants are least susceptible to the impacts of grazing. During the start of growth of particularly the key species the livestock will be trailed out of the area. This will allow for rest during the critical growing period. This treatment provides growing season rest for forage plants allowing plant growth, improved vigor, production and storage of food for next year's growth, and seed production.

	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	12/7	1/1	2/1	3/1	3/17
Lava Beds Former Holland Area-of-use	Rest Period									Graze				
Northwest Selenite Range	Rest Period									Graze				

Sheep will be trailed from the Susanville District to the Blue Wing area-of-use during December and trailed from the Blue Wing area-of-use back to the Susanville District during March. Refer to each grazing license for a detailed description of designated trail area, trailing days, camping areas, prohibited areas, etc.

Benefits: The expanded area-of-use will alleviate repeated concentrated grazing use on the smaller original adjudicated area-of-use. This action will also provide the permittee an opportunity to be more flexible in his operation by allowing him to follow the localized snowstorms thus eliminating the need to haul water. This will help to improve the overall ecological condition in the northern Selenite Range.

b. Interim Grazing Practices

The interim grazing practices for all sheep operators will reflect the grazing scheme of this plan which is the same as past use with the exception of the expanded areas-of-use for Bunyard and Cook. The seasonal rotation system for C-Punch Corporation will be partially implemented. Full implementation will not occur until the Jungo-Sulphur fence is constructed. Improved livestock distribution and control are dependent upon construction of range improvements listed in Table 5. Partial implementation of the seasonal rotation system will begin in the West Selenites, Slough House unit A, the Nightingale Shawave Mountains, and Granite Springs Valley unit B, East Selenites, and flats between Lava Beds and Selenites unit C.

Southern Pacific Grazing Lease SPL-3266 has been entered into with DeLong Ranches Inc.to include 223 AUMs Exchange-of-Use. Southern Pacific Grazing Lease SPL-3265 has been terminated and has been awarded to Tim DeLong as SPL-6431 to include 895 AUMs Exchange-of-Use. The transfer of preference from Dufurrena to Dufurrena-DeLong as an undivided 1/2 interest was approved November 1, 1985, and DeLong Ranches began grazing November 1, 1985.

c. Mineral Supplements

The placement of salt, mineral, and protein blocks will be placed a minimum of one-quarter mile from water sources in areas of ridges and on flat spots near shade and gentle slopes that are accessible by livestock.

Benefits: The salting plan will achieve better distribution of domestic livestock and wild horses/burros throughout the planning area. It may help to improve the condition of the vegetation in the wet and riparian areas by reducing the amount of concentrated use.

d. Billing Procedure

The permittees will be billed prior to the start of the grazing period and all grazing bills will be paid prior to the start of grazing.

Accurate records will be kept of the stocking rates and dates of movement of livestock between pastures, seasonal use areas, and private lands. An Actual Use Report will be submitted to the Sonoma-Gerlach Resource Area 15 days after the end of each authorized grazing period.

e. Flexibility

Flexibility in turnout, removal dates and numbers of livestock may be allowed if this use is in conformance with other resource needs, particularly the needs of important forage and wildlife habitat. The provision for flexibility will not authorize use in excess of the permittee's or lessee's recognized active grazing preference. The amount of use may, however, be reduced voluntarily below the active grazing preference upon notification to the Area Manager. Changes in grazing use outside the normal operation and limits of flexibility must be applied for and authorized in advance of the grazing period. In emergency situations where catastrophes such as severe storms, loss of livestock or destruction of vegetation are unavoidable, the permittee would be allowed to move livestock or provide supplemental feed without prior authorization, however, notification must be made as soon as possible to the Area Manager. Flexibility in turnout and removal dates is 15 days, providing the Sonoma-Gerlach Resource Area is notified in advance.

f. Control Drift

Control unauthorized livestock drift from adjacent allotments.

Construct a series of fences in the northern, western, and southern boundaries of the planning area. Construction will depend upon the availability of funding and other district priorities.

Benefits: The construction of these fencelines is basic for the success of the grazing management plan. The fences will enable the cattle operator to rotate his livestock to different use areas throughout the planning area and be able to hold them there with a minimum amount of effort. This will also provide rest for the utilized areas. The fencelines will also help to control unauthorized livestock drift from adjacent allotments. Competition for available forage should be reduced as only authorized livestock will be utilizing the planning area. This will also provide accurate actual use data, to incorporate into the monitoring plan.

Refer to "Proposed Range Improvement" section for projects proposed to achieve this objective.

6. Range Improvements

This management plan is centered around water availability and control as a primary management tool for manipulating livestock movement. The desired management objectives may be partially achieved with the existing range improvements. Full implementation of the grazing system is dependent upon development of all proposed range improvements. A Range Investment Analysis (SageRam) program has been completed on all proposed range improvements. The benefit-cost analysis for the Blue Wing-Seven Troughs is 1/1 for all costs at 7.875%. The internal rate of return equals 7.7% for the total cost.

Table III attached lists existing range developments and proposed range improvements.

7. Monitoring

Refer to attached Blue Wine/Seven Troughs Monitoring Plan. The Blue Wing-Seven Troughs CRMP group signed and concurred to the monitoring plan on August 21, 1985.

8. Implementation Schedules

See Table V for the implementation schedule for the Blue Wing and Seven Troughs Allotments.

9. Map

See Map #1 attached.

10. AMP Approval

I, the undersigned, permittee(s) and Area Manager of the public lands found within the Blue Wing and Seven Troughs Allotments, concur and accept this Allotment Management Plan as my authorized grazing operation. Grazing privileges remain subject to applicable regulations.

Table III. Existing Range Developments.

Project Name	Number	Agreement/ Permit	Location	Allotment	Maintenance Responsibility	Contributi
SPRING DEVELOPMENTS:						
North Juniper Spring	0151	Cooperative	T. 28 N., R. 26 E., Sec. 32 NESE	Blue Wing	C-Punch Corp.	
NERA Spring #57	0161	Cooperative	T. 31 N., R. 28 E., Sec. 23 NWNW	Blue Wing	C-Punch Corp.	
NERA Spring #58	0164	Cooperative	T. 31 N., R. 28 E., Sec. 31 SWNW	Blue Wing	C-Punch Corp.	
Willow Spring	0259	Cooperative	T. 32 N., R. 27 E., Sec. 30 NWSE	Blue Wing	C-Punch Corp.	
Upper Lava Beds Spring	0260	Cooperative	T. 32 N., R. 26 E., Sec. 36 NENE	Blue Wing	C-Punch Corp.	
Elephant Head Spring	0261	Cooperative	T. 31 N., R. 27 E., Sec. 6 SENE	Blue Wing	C-Punch Corp.	
Gimbel Spring	0262	Cooperative	T. 30 N., R. 24 E., Sec. 27 NWSW	Blue Wing	C-Punch Corp.	
Summit Spring	0263	Cooperative	T. 30 N., R. 24 E., Sec. 8 SENW	Blue Wing	C-Punch Corp.	
Blue Wing Spring	0265	Cooperative	T. 26 N., R. 26 E., Sec. 22 NENW	Blue Wing	C-Punch Corp.	
Rattlesnake Spring and Storage Tank	0553	Cooperative	T. 31 N., R. 27 E., Sec. 32	Blue Wing	C-Punch Corp.	
Tunnel Spring	0801	Cooperative	T. 27 N., R. 25 E., Sec. 11 NENW	Blue Wing	C-Punch Corp.	
Upper Stonehouse Spring	0821	RIP	T. 27 N., R. 25 E., Sec. 21 NWNE	Blue Wing	C-Punch Corp.	
Lower Stonehouse Spring	0825	Cooperative	T. 27 N., R. 25 E., Sec. 8 SESE	Blue Wing	C-Punch Corp.	
Last Chance Spring	0872	Cooperative	T. 31 N., R. 28 E., Sec. 31 NW	Blue Wing	C-Punch Corp.	
Rocky Spring	3557	Cooperative	T. 31 N., R. 27 E., Sec. 29 NE	Blue Wing	C-Punch Corp.	
Rattlesnake Spring	3560		T. 31 N., R. 27 E., Sec. 33	Blue Wing	BLM	
Burnt Canyon Spring	0483	Cooperative	T. 31 N., R. 28 E., Sec. 35 NWSE	Seven Troughs	C-Punch Corp.	
American Flat Spring	0485	Cooperative	T. 31 N., R. 29 E., Sec. 29 SENE	Seven Troughs	C-Punch Corp.	
Long Canyon Spring	0622	Cooperative	T. 34 N., R. 31 E., Sec. 22 SE	Seven Troughs	C-Punch Corp.	
Egbert Meadow Spring	4272	Cooperative	T. 31 N., R. 29 E., Sec. 4	Seven Troughs	C-Punch Corp.	

Table III. Existing Range Developments.

Project Name	Number	Agreement/ Permit	Location	Allotment	Maintenance Responsibility	Contribut
RESERVOIRS:						
Farrel Check Dam	1006	Cooperative	T. 31 N., R. 28 E., Sec. 16 NE	Blue Wing	C-Punch Corp.	
Last Chance Reservoir	0163	RIP	T. 31 N., R. 24 E., Sec. 34 NE	Blue Wing	C-Punch Corp.	
PIPELINES:						
Painted Rock Pipeline	0832	Cooperative	T. 29 N., R. 24 E., Sec. 19 S1/2	Blue Wing	C-Punch Corp.	
Alson Spring Pipeline	0874	Cooperative	T. 31 N., R. 28 E., Sec. 16	Blue Wing	C-Punch Corp.	
C-Punch Pipeline	4234	Cooperative	T. 29 N., R. 24 E., Sec. 26	Blue Wing	C-Punch Corp.	
Betty Creek Pipeline	4350	Cooperative	T. 30 N., R. 24 E., Sec. 26 NE	Blue Wing	C-Punch Corp.	
Mule Creek Pipeline	0875	Cooperative	T. 31 N., R. 28 E., Sec. 35 NE	Seven Troughs	C-Punch Corp.	
Jackass Spring Pipeline	1003	Cooperative	T. 32 N., R. 24 E., Sec. 21	Seven Troughs	C-Punch Corp.	
Corral Spring Pipeline	1004	Cooperative	T. 32 N., R. 29 E., Sec. 14 SE	Seven Troughs	C-Punch Corp.	
Egbert Spring Pipeline	1005	Cooperative	T. 31 N., R. 29 E., Sec. 4 NE	Seven Troughs	C-Punch Corp.	
WELL DEVELOPMENTS:						
Limbo Well	0186	Cooperative	T. 28 N., R. 24 E., Sec. 24 NW	Blue Wing	C-Punch Corp.	
Desert Well	0195	Cooperative	T. 30 N., R. 24 E., Sec. 1 SESE	Blue Wing	C-Punch Corp.	
Vernon Well #1	0763	Cooperative	T. 28 N., R. 28 E., Sec. 8 SWSW	Blue Wing	C-Punch Corp.	
West Ragged Top Well	0771	Cooperative	T. 26 N., R. 27 E., Sec. 26 NENE	Blue Wing	C-Punch Corp.	
Granite Wash Well	1010	Cooperative	T. 32 N., R. 28 E., Sec. 8 SW	Blue Wing	C-Punch Corp.	
Twin Buttes Well	4558	Cooperative	T. 30 N., R. 26 E., Sec. 16 SW	Blue Wing	C-Punch Corp.	
Telephone Well	0848	RIP	T. 24 N., R. 26 E., Sec. 12 NW	Blue Wing	C-Punch Corp.	
Vernon Well #2	0788	Cooperative	T. 29 N., R. 29 E., Sec. 6 SE	Seven Troughs	C-Punch Corp.	

Table III. Existing Range Developments.

Project Name	Number	Agreement/ Permit	Location	Allotment	Maintenance Responsibility	Contributions
Long Walk Well	3566	Cooperative	T. 30 N., R. 29 E., Sec. 12 NE	Seven Troughs	C-Punch Corp./ Duncan	
FENCES:						
Limbo Seeding Fence	0629	Cooperative	T. 30 N., R. 24 E., Sec. 34 S1/2	Blue Wing	C-Punch Corp.	
C-Punch Holding Field Fence	4085	Cooperative	T. 30 N., R. 24 E., Sec. 15, 16, 21, 22	Blue Wing	C-Punch Corp.	
Blue Wing Study Exclosure	4740		T. 32 N., R. 29 E., Sec. 35 NENE	Blue Wing	BLM	
Shawave Study Exclosure	4741		T. 24 N., R. 25 E., Sec. 2 SW	Blue Wing	BLM	
Cow Creek Exclosure	4697		T. 31 N., R. 29 E., Sec. 7 NWSW	Seven Troughs	BLM	
Stonehouse Meadow Fence	4556		T. 31 N., R. 29 E., Sec. 25 NE	Seven Troughs	BLM	
Olson Meadow Fence	4536		T. 32 N., R. 29 E., Sec. 21 SW	Seven Troughs	NDOW	
Shingle Spring Fence	4535		T. 31 N., R. 29 E., Sec. 17 NE	Seven Troughs	NDOW	
Egbert Meadow Fence	4178		T. 31 N., R. 29 E., Sec. 4 SW	Seven Troughs	BLM	
Seven Troughs Fence	4075		T. 30 N., R. 29 E., Sec.	Seven Troughs	C-Punch Corp.	
CORRALS:						
Ten Mile Corral	0157	RIP	T. 32 N., R. 24 E., Sec. 22 SESW	Blue Wing	C-Punch Corp.	
Cowles Corral	0182	RIP	T. 26 N., R. 27 E., Sec. 26 NENE	Blue Wing	C-Punch Corp.	
Limbo Corral	4926	RIP	T. 30 N., R. 23 1/2 E., Sec. 31 NENW	Blue Wing	C-Punch Corp.	
Circle L Corral	1200	RIP	T. 31 N., R. 29 E., Sec. 29 SENW	Blue Wing	C-Punch Corp.	
Porter Spring Corral	4756	Cooperative	T. 29 N., R. 27 E., Sec. 12 NENW	Blue Wing	C-Punch Corp.	
Stonehouse Corral	4773	Cooperative	T. 27 N., R. 25 E., Sec. 34 SWNW	Blue Wing	C-Punch Corp.	
LAND TREATMENTS:						
Limbo Seeding	0612		T. 30 N., R. 24 E., Sec. 1 & 34	Blue Wing	BLM	

Table IV. Proposed Range Improvements.

Project Name	Agreement/ Permit Number	Location	Allotment	Maintenance Responsibility	Contributions
Highway 34			Blue Wing/ Rodeo Creek		
Desert Queen Fence			Blue Wing/ Desert Queen		
Jungo-Sulphur Fence			Seven Troughs		
SPRINGS AND PIPELINES:					
Judges Place Spring and Pipeline		T. 32 N., R. 29 E., Sec. 20	Blue Wing		
Trail Canyon Spring and Pipeline		T. 31 N., R. 26 E., Sec. 1 & 12	Blue Wing		
Twin Buttes Mine Spring & Pipeline		T. 30 N., R. 26 E., Sec. 1	Blue Wing		
Cow Creek Exclosure Spring		T. 31 N., R. 28 E., Sec. 12	Seven Troughs		
WELLS:					
Nixon Flat Well		T. 23 N., R. 24 E.	Blue Wing		
Rocky Canyon Well		T. 31 N., R. 30 E.	Seven Troughs		
Toll Rock Canyon Well		T. 29 N., R. 29 E.	Seven Troughs		
Antelope Siding Well		T. 35 N., R. 30 E.	Seven Troughs		
Hard To Find Well		T. 25 N., R. 28 E.	Blue Wing		
Lowry Well		T. 27 N., R. 28 E.	Blue Wing		

Benefits: The development of these springs, pipelines, and wells will yield a better distribution of livestock throughout the planning area and will open up areas to grazing that previously have not been utilized except during wet winters when standing water is available. After these waters are developed, they can be used as "tools" to manipulate grazing use at specific times of the year, which should keep utilization levels on key species at acceptable levels, and provide periodic rest for the vegetative communities. The construction of these fencelines is basic for the success of the grazing management plan. The fences will enable the cattle operator to rotate his livestock to different use areas throughout the planning area and be able to hold them there with a minimum amount of effort. This will also provide rest for the utilized areas. The fencelines will also help to control unauthorized livestock drift from adjacent allotments. Competition for available forage should be reduced as only authorized livestock will be utilizing the planning area. This will also provide accurate actual use data, to incorporate into the monitoring plan.

Table IV. Proposed Range Improvements.

Project Name	Number	Agreement/ Permit	Location	Allotment	Maintenance Responsibility	Contributions
Mule Canyon Sagebrush Control			T. 32 N., R. 28 E.	Seven Troughs		
Sagehen Wash Sagebrush Control			T. 26 N., R. 29 E.	Blue Wing		

Benefits: These projects should produce more forage for livestock, wildlife, and wild horses/burros. The quality, quantity, and diversity of the native grasses and forbs should be enhanced once the sagebrush is removed, the canopy is opened up, and the competition for ground water is reduced. (The increase in forage will serve to maintain management objectives and to sustain active preference for livestock, reasonable numbers for wildlife , and appropriate management levels for wild horses/burros.)

Table V. Blue Wing and Seven Troughs Allotments Implementation Schedule.

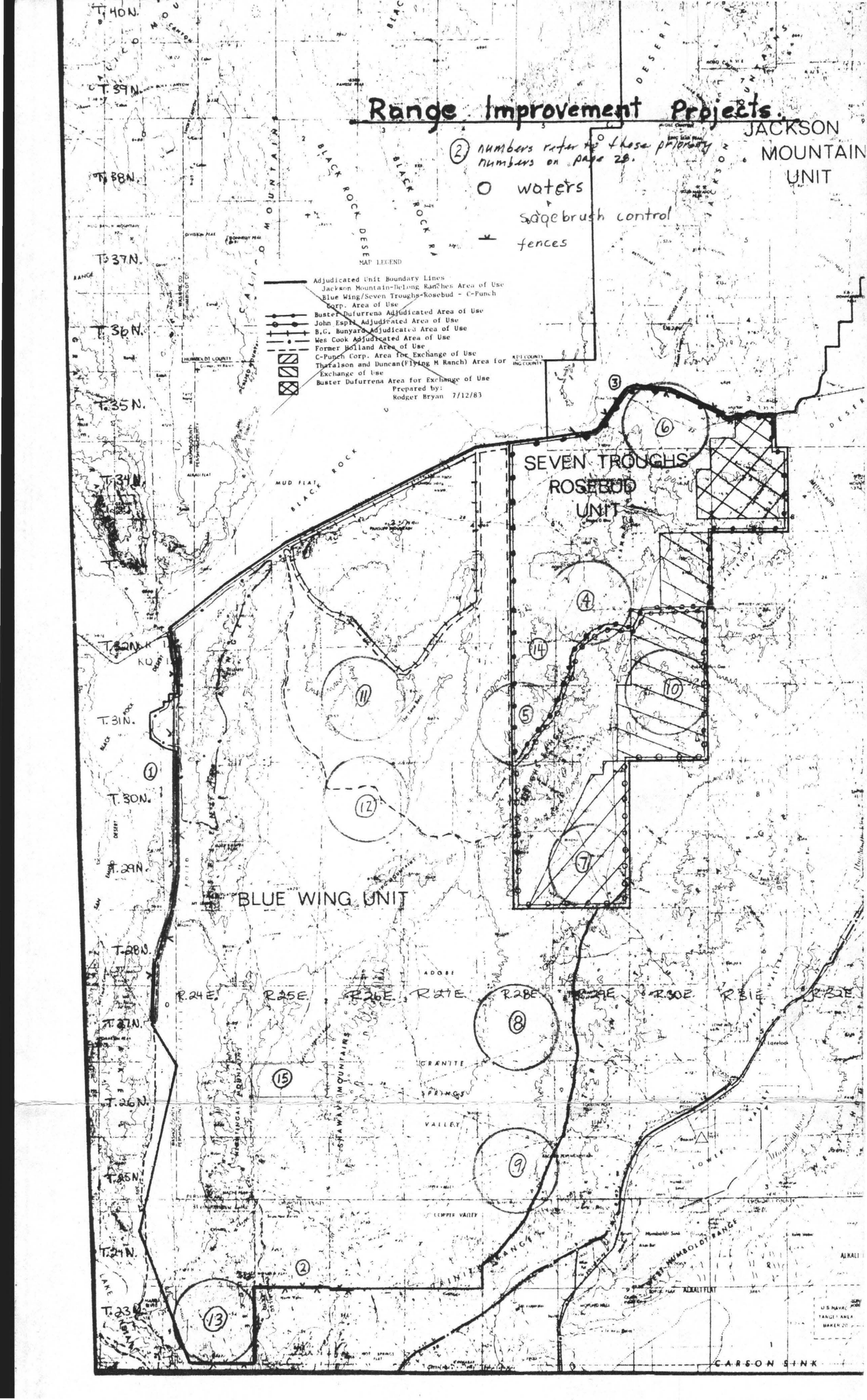
Priority	New Range Improvement Projects	Year 1	2	3	4	5	6	7	8	9	10	11	12
1	Highway 34 Fence & Cattleguard	X											
2	Desert Queen Fence and Cattleguard		X										
3	Jungo-Sulphur Fence and Cattleguard			X									
4	Judges Place Spring and Pipeline				X								
5	Cow Creek Exclosure Spring					X							
	WELLS:												
6	Antelope Siding Well (Spring Development)							X					
7	Toll Rock Canyon Well							X					
8	Lowry Well								X				
9	Hard to Find Well								X				
10	Rocky Canyon Well									X			
11	Trail Canyon Well & Pipeline									X			
12	Twin Buttes Mine Spring & Pipeline										X		
13	Nixon Flat Well												X
14	Mule Canyon Sagebrush Control											X	
15	Sagehen Wash Sagebrush Control												X
	OTHERS:												
	~~Monitoring~~	13 Key Areas Est.	2 Key Areas Est.										
	COST BREAKDOWN PER YEAR:	Constr. Compl.	Constr. Compl.	$100,000	$6,300 4,000 $10,300	$6,300		$25,000 6,300 $31,300	$25,000 25,000 $50,000	$25,000 4,000 25,000 $54,000	$6,300 8,000 $14,300	$180,000	$180,000 25,000 $205,000

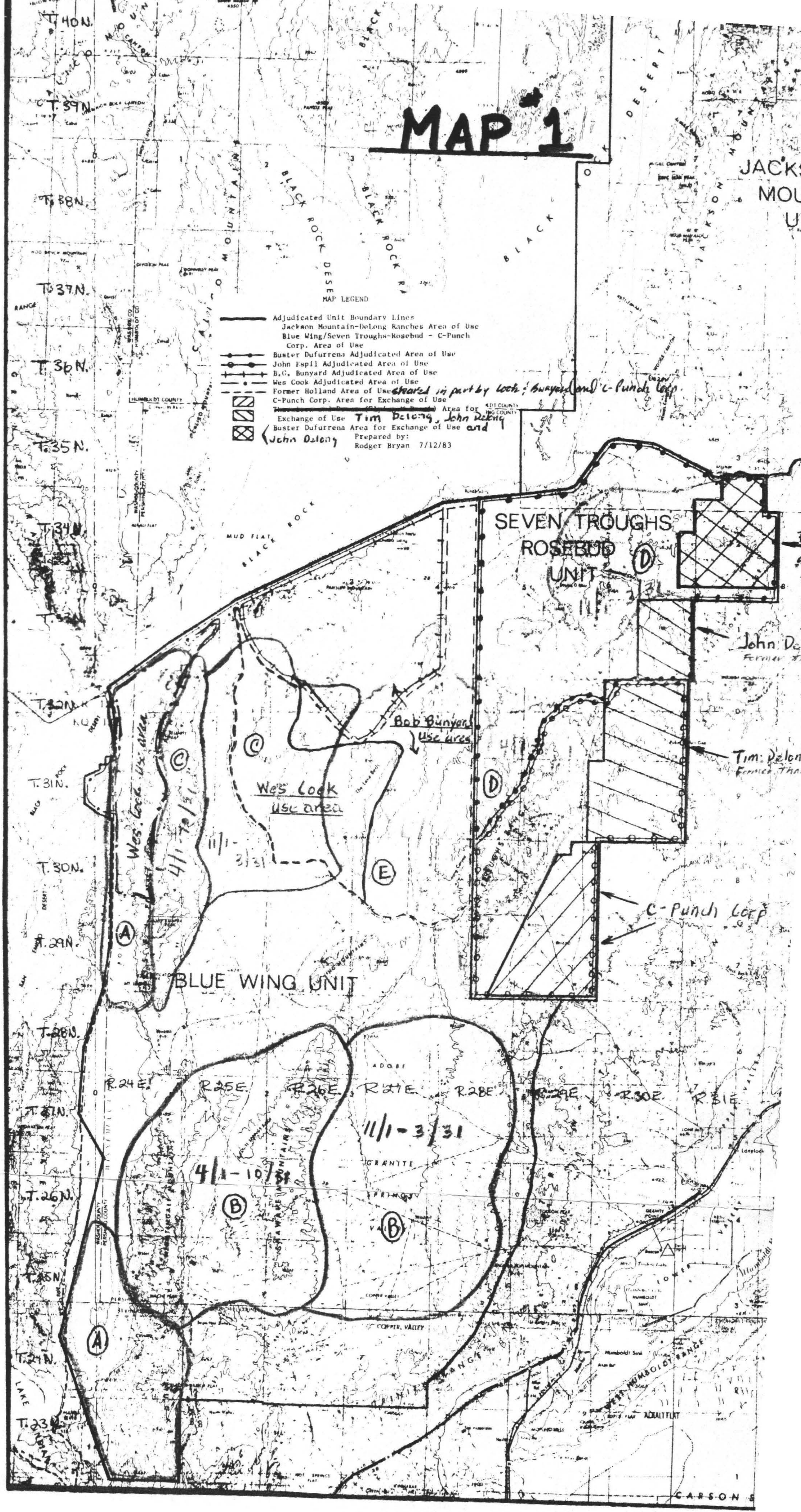
TOTAL COST FOR FULL IMPLEMENTATION: $651,200.00

COST BREAKDOWN: (as based on 1986 figures)

Well	$25,000 Each
Spring	6,300 Each
Pipeline	4,000/Mile
Fence	3,800/Mile
Cattleguard	2,500/Mile
Electric Fence	2,000/Mile
Sagebrush Control	$5.00/Acres to burn; $18.00 per acre to spray 10,000 acres per control area

Development of projects is dependent upon available funds and water rights acquisition.
Project priority and development year based on CRMP Plan and SageRam.


Range Improvement Projects.
(2) numbers refer to these projects numbers on page 28.
○ waters
sagebrush control
fences
JACKSON MOUNTAIN UNIT
SEVEN TROUGHS ROSEBUD UNIT
BLUE WING UNIT
MAP LEGEND
Adjudicated Unit Boundary Lines
Jackson Mountain-Delong Ranches Area of Use
Blue Wing/Seven Troughs-Rosebud - C-Punch Corp. Area of Use
Buster Dufurrena Adjudicated Area of Use
John Espil Adjudicated Area of Use
B.G. Bunyard Adjudicated Area of Use
Wes Cook Adjudicated Area of Use
Former Holland Area of Use
C-Punch Corp. Area for Exchange of Use
Tharalson and Duncan(Flying M Ranch) Area for Exchange of Use
Buster Dufurrena Area for Exchange of Use
Prepared by:
Rodger Bryan 7/12/83
T.40N.
T.39N.
T.38N.
T.37N.
T.36N.
T.35N.
T.34N.
T.33N.
T.32N.
T.31N.
T.30N.
T.29N.
T.28N.
T.27N.
T.26N.
T.25N.
T.24N.
T.23N.
R.24E.
R.25E.
R.26E.
R.27E.
R.28E.
R.29E.
R.30E.
R.31E.
R.32E.
BLACK ROCK DESERT
MUD FLAT
GRANITE SPRINGS VALLEY
ADOBE
ALKALI FLAT
CARSON SINK


MAP 1
MAP LEGEND
Adjudicated Unit Boundary Lines
Jackson Mountain-DeLong Ranches Area of Use
Blue Wing/Seven Troughs-Rosebud - C-Punch Corp. Area of Use
Buster Dufurrena Adjudicated Area of Use
John Espil Adjudicated Area of Use
B.C. Bunyard Adjudicated Area of Use
Wes Cook Adjudicated Area of Use
Former Holland Area of Use shared in part by Cook, Bunyard and C-Punch Corp.
C-Punch Corp. Area for Exchange of Use
Area for Exchange of Use Tim Delong, John Delong
Buster Dufurrena Area for Exchange of Use and John Delong
Prepared by:
Rodger Bryan 7/12/83
SEVEN TROUGHS ROSEBUD UNIT
BLUE WING UNIT
JACKS
MOU
Wes Cook Use area
Wes Cook Use Area
Bob Bunyard Use area
John De
Tim Delon
C-Punch Corp
4/1-10/31
11/1-3/31
T.40N.
T.39N.
T.38N.
T.37N.
T.36N.
T.35N.
T.34N.
T.32N.
T.31N.
T.30N.
T.29N.
T.28N.
T.27N.
T.26N.
T.25N.
T.24N.
T.23N.
R.24E.
R.25E.
R.26E.
R.27E.
R.28E.
R.29E.
R.30E.
R.31E.
BLACK ROCK DESERT
MUD FLAT
COPPER VALLEY
CARSON S

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WINNEMUCCA DISTRICT OFFICE
705 East 4th Street
Winnemucca, Nevada 89445

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
4710.3
(NV-027.8)

June 12, 1987

Dear Interested Party:

In March of 1986, you received a copy of the draft Blue Wing/Seven Troughs Herd Management Area Plan (HMAP) for your review, comments, and suggestions. During the comment period we received input from three organizations. The suggestions were incorporated to the extent possible and the HMAP has been revised as follows.

1. The first sentence at the top of page two and the last paragraph in section I.B.2.b.(1) reflect that data is available for the Herd Management Area (HMA) on age structure, color types, sex ratios, and animal quality and condition.

2. The heading for section I.B.2.c. on page 9 was changed to Other Biotic Components.

3. It was decided that enough data was available on determining the accuracy of census methods, and number (7) of section I.B.2.d. was removed (page 13).

4. The two habitat management objectives on page 14 were revised to read as follows:

   "1. Maintain or improve the rangeland ecological status within the HMA utilizing the criteria and timeframes established in the Blue Wing-Seven Troughs Monitoring Plan 1985 (Appendix 27).

   2. Provide water for wild horses/burros throughout the HMA, where possible to yield a better distribution of animals utilizing the habitat, therefore reducing concentrated or overuse of particular areas."

5. The first animal management objective on page 14 was changed to delete the allowance of a variation of ± 30-35 percent in population numbers.

6. The term "proper stocking levels" was changed to "forage use levels" on page 14, section II.B.2.

7. Section II.B.5. was changed to:

"5. Acquire data on the demographic characteristics of the wild horse/burro populations to include information on sex ratio, age structure, young/adult ratio, and actual use. These parameters will be analyzed to determine natality, mortality, and rate of increase."

8. Sections III.C.1. and 2. on page 16 were revised as follows to reflect the deletion of the ± 30-35 percent variation in population numbers and the newly inserted requirement for annual gatherings.

"1. The wild horse and burro population will be adjusted to an appropriate management level of 640 horses and 104 burros in the Lava Beds/Seven Troughs subunit and 237 horses and 39 burros in the Nightingale/Shawave subunit in accordance with the Sonoma/Gerlach MFP decision and the Lovelock CRMP group recommendation.

2. A total count inventory will be conducted on the HMA immediately prior to the gathering operation to determine the exact number of animals to be removed. Gatherings will be conducted yearly for five years after attainment of the AML to accurately reflect forage use levels by the wild horse/burro population for monitoring studies."

9. On page 17, section III.D.1. was changed to:

"1. Refinement of the AML will be based upon an analysis of monitoring data. Monitoring data will be used to evaluate attainment of HMAP objectives and key area objectives (i.e. identify which objectives were not met, if applicable, and identify why the objectives were not met, if applicable)."

10. Three of the population study methods on pages 20 and 21 were revised as follows:

"1. <u>Home Range and Seasonal Movements</u>

A comprehensive study will be conducted to secure an understanding of home ranges and seasonal movements of wild horses/burros. Twenty wild horses will be captured and fixed with radio telemetry collars either during removal roundups or special gatherings conducted after the AML has been attained. These animals will be taken from four areas (five from each) in the HMA. Each group of five animals will be composed of three females in the 2-5 year age class and two males in the 2-7 year age class. Information that will be obtained from these horses include: reproductive rate, mortality rate, extent of immigration and emigration, intra- and interband movements. This information will be collected for a minimum of four times each year (i.e. spring, summer, fall, and winter) for a period of two to four years depending on the life of the collar battery.

2. Productivity and Survival

Age classification surveys will be conducted utilizing ground observations twice each year for the first three years after the AML of animals is reached. These surveys will be conducted once in late summer immediately following the peak foaling period and once in late winter when the foals are approaching one year of age. During these surveys animals will be recorded in three classifications: adults, yearlings, and foals. This information will be utilized to perform calculations described in the 4730 Manual necessary for determining the reproductive rate, fecundity, mortality, and rate of increase for the wild horse/burro population in the HMA.

6. Animal Condition

The condition of the wild horse/burro populations will be determined from visual observation of the animals. Conformation or personal judgments as to animal type will be avoided in this determination but the presence and significance of physical deformities will be noted. Factors which will be considered in evaluating the condition of the animals include presence or absence of body fat, appearance of skin and hair, and soundness of legs and feet. While it is recognized that an evaluation of animal condition is highly subjective, the proportion of animals in each condition class (good, fair, poor) will be determined and recorded."

11. Map #8 Key Management Areas was added to delineate the rangeland monitoring studies that have been established in the HMA.

For your future reference and information please find a copy of the final Blue Wing/Seven Troughs HMAP with the above mentioned changes. This document received concurrence and approval from the State Director on March 4, 1987. The Blue Wing/Seven Troughs Monitoring Plan (Appendix 27.) is not included because it did not change from the copy you received in March 1986.

If you have any questions please contact Rodger Bryan of my staff.

Sincerely yours,

Gerald Brandvold

Gerald P. Brandvold
Area Manager

Enclosure

BLUE WING-SEVEN TROUGHS

WILD HORSE AND BURRO

HERD MANAGEMENT AREA PLAN

BLUE WING-SEVEN TROUGHS

WILD HORSE AND BURRO HERD MANAGEMENT AREA PLAN

SONOMA-GERLACH RESOURCE AREA

BLUE WING PLANNING UNIT

WINNEMUCCA DISTRICT

Prepared by:

Rodger T. Bryan — 9-19-86

Rodger T. Bryan, Natural Resource Specialist — Date

Reviewed by:

Richard D. Wheeler — 9/23/86

Richard D. Wheeler, Wild Horse and Burro Specialist — Date

Recommended and Approved by:

Gerald P. Brandvold — 9-23-86

Gerald P. Brandvold, Area Manager — Date

Concurred by:

Frank C. Shields — 9/25/86

Frank C. Shields, Winnemucca District Manager — Date

Concurred by:

For Fred Wolf — 3/4/87

Edward F. Spang, Nevada State Director — Date

Table of Contents

Table of Contents

I. Introduction-Background Information

A. Introduction

The land use plan for the Sonoma-Gerlach Resource Area of the Winnemucca District of the Bureau of Land Management received State Director concurrence on July 9, 1982. The Management Framework Plan Step III (District Manager's decisions) Wild Horse/Burro #1.1 provided for the retention and management of wild horses and burros on noncheckerboard lands in the resource area.

The Blue Wing-Seven Troughs Wild Horse and Burro Herd Management Area Plan (HMAP) was developed in response to the approval of the land use plan and in conjunction with the Coordinated Resource Management and Planning (CRMP) Plan approved July 24, 1984. A coordinated resource Monitoring Plan, Allotment Management Plan, and Habitat Management Plan are also being developed which will address specific and related habitat management objectives for wild horses and burros, wildlife, and livestock.

B. Background Information

1. Location and Setting

The southern end of the Herd Management Area (HMA) is located approximately 43 air miles northeast of Reno, Nevada. The HMA is approximately 71 miles long and 35 miles wide (see Map 1). The area is comprised of approximately 751,955 acres of public land and approximately 320 acres of private land, and is located in the Blue Wing and Seven Troughs Allotments of the Blue Wing Planning Unit (see Map 2).

There are six mountain ranges within the boundary of the HMA: (1) Lava Beds, (2) Kamma, (3) Seven Troughs, (4) Blue Wing, (5) Nightingale, and (6) Shawave. The mountain ranges are typically separated by valley floors ranging from quite small (2-3 miles across) to extremely large (10-15 miles across).

The area is bordered on the north by the Western Pacific Railroad tracks, on the west by the eastern side of the Selenite Range and Winnemucca Lake, and on the southern and eastern sides by the western boundary of the checkerboard Railroad Land Grant area. Lovelock, Nevada, is approximately 29 miles southeast of the northwest corner of the HMA, Gerlach is seven miles west, and Winnemucca is approximately 39 miles to the northeast.

2. Resource Information

a. Reference to the Land Use Plan (LUP)

The preparation of current LUP began in 1977 with the development of the Unit Resource Analysis and culminated with the issuance of the District Manager's decisions on June 30, 1982. One of the first steps in the planning process for the wild horse and burro program was to identify and separate

individual populations into Herd Areas (HAs), and to assimilate the data concerning population dynamics and characteristics of the animals. Information regarding wild horse/burro reproductive and mortality rates (rate of increase), and the extent of immigration and emigration is relatively unknown for the HMA.

For the purpose of analysis in the LUP, the Blue Wing-Seven Troughs planning area was divided into all or part of nine HAs (see Map 3): (1) Kamma Mountains, (2) Antelope Range, (3) Lava Beds, (4) Seven Troughs, (5) Selenite Range, (6) Blue Wing Mountains, (7) Nightingale Mountains, (8) Shawave Mountains, and (9) Truckee Range. Both the Antelope and Truckee Range HAs are in a checkerboard land pattern.

The MFP III District Manager's decision states that we will remove wild horses and burros from checkerboard HAs unless a cooperative agreement providing for the retention and protection of wild horses and burros is consummated with the affected private land owners(s). The Bureau has not received any requests for nor consummated any cooperative agreements to maintain wild horses or burros on private lands.

Following finalization of the MFP III District Manager's decision establishing Appropriate Management Levels (AML) for wild horses/burros in each of the HAs identified above, a decision was made to combine those HAs where wild horse/burro populations will be retained into one HMA for the purpose of developing one HMAP. As a result, the HAs identified in the LUP are now collectively referred to as the Blue Wing-Seven Troughs HMA.

Since the preparation of the LUP, more information has been gathered on horse and burro movements within the HMA. To better manage the HMA and more accurately reflect true horse and burro use areas, the HMA has been divided into two subunits: (1) Lava Beds-Seven Troughs and (2) Nightingale-Shawave (see Map 2).

Changes in rangeland policy eliminated allocating forage to the different types of large herbivores based on one-time range surveys. The current emphasis is to establish monitoring studies and adjust numbers of grazing animals based on the results of these studies.

The initial management level of wild horses and burros to be monitored for the Blue Wing-Seven Troughs planning area has been recommended by the Lovelock CRMP group at 877 horses and 143 burros, which roughly corresponds to the 1974 levels. This negotiated number is approximately 486 animals (410 horses and 76 burros) less than the July 1982 population. The recommended numbers have been accepted by the Winnemucca District Manager and therefore become the AML for the purpose of this HMAP.

The AML of animals that will be maintained and managed in each subunit is as follows:

Subunit	Horses	Burros	Total
Lava Beds-Seven Troughs	640	104	744
Nightingale-Shawave	237	39	276
TOTAL	877	143	1,020

b. Wild Horse and Burro Use

(1) Population Data

The first complete aerial census was conducted on the HMA in the fall of 1974 which revealed a total of 991 horses and 29 burros on the noncheckerboard lands and 135 horses on the checkerboard lands. The next census was flown in the spring of 1977 and 1,482 horses and 84 burros were observed on noncheckerboard lands and 248 horses were on checkerboard lands. An additional aerial census was conducted in the summer of 1980. This showed 2,094 horses, one mule, and 178 burros on noncheckerboard lands and 389 horses, five burros, and 12 mules on checkerboard lands.

In the summer and fall of 1981 a total of 1,145 horses and 19 burros were removed from the noncheckerboard lands in the HMA and 150 horses were removed from the checkerboard areas.

Another census was conducted in the fall of 1984, and 2,885 horses, two mules, and 460 burros were observed on noncheckerboard lands and 508 horses and six mules were counted on checkerboard lands. Refer to Appendix 3 for a detailed breakdown of the censuses.

Between January 16 and February 26, 1985, a total of 1,707 horses and 237 burros were removed from the noncheckerboard lands in the area and 200 horses, 11 mules, and nine burros were removed from the checkerboard lands.

The area was censused again from June 3-7, 1985, and 584 horses and 3 burros were observed on checkerboard lands, 1,422 horses, 190 burros, and 1 mule on the Lava Beds/Seven Troughs subunit, 406 horses and 49 burros on the Nightingale/Shawave subunit, and 24 horses and 1 burro on the Selenite HUA.

Aerial surveys give at best a rough estimate of the actual population size and consistently underestimate densities (Golley and Buechner 1968; Bergeund 1963; LeResch and Raush 1974; Gilbert and Grieb 1957; Frei, Peterson, and Hall 1979). The accuracy of aerial censuses in estimating absolute density of wildlife populations varies from 29 to 88% (Caughley 1977).

Preliminary research conducted by Siniff et. al. (1981) suggests that in conducting an aerial census only a percentage of the total number of animals are ever counted. This percentage could range from 45% to 73% or higher depending on the type of vegetative cover and terrain.

Between July 15 and July 26, 1985, an additional 400 horses were removed from the checkerboard lands and 64 burros were removed from the Lava Beds/Seven Troughs subunit. Funding restraints prohibited gathering enough animals to attain the AML for each area.

There is a unique population of spotted and pinto burros that inhabit the HMA. The percentage of animals possessing such color markings appears to be quite high compared to the entire population.

As mentioned in the previous section, information regarding factors affecting the demographic characteristics of the population are relatively unknown for the HMA. Data obtained from the 1,164 animals captured in 1981 and the 2,998 animals captured in 1985 does provide some information on age structure, general health, and color of those animals that were removed (see Appendices 4 through 20). Appendices 21 through 25, a summary of the statistics of all the animals gathered in the HMA, makes it possible to form some generalizations on the gender, age structure, and the dominant color types found in the HMA.

The data for the wild horse population indicates that: 1) there are slightly more females (54.5%) than males (45.6%); 2) approximately 52% of the animals are less than four years old; and 3) the dominant color types are bay (21.8%), sorrel (19.7%), and brown (14.9%). The data for the burro population shows that: 1) there are slightly more males (50.9%) than females (49.1%); 2) approximately 84% of the population is less than seven years old; and 3) the dominant color types are gray (64.7%) and brown (12.5%).

(2) Movement Patterns-Water Availability

Observations of the wild horses and burros in the HMA indicate that their movement and distribution is directly related to water availability. During the winter months, the animals use the majority of the HMA when cold temperatures reduce the need for watering on a daily basis, and water collects from rain and melting snow in small depressions and ditches along the roadways for short periods of time. The wild horses and burros also use waters that are pumped by the livestock operators in the allotments (see Map 4).

During the summer months, the animals are generally restricted to the mid and higher elevations of the mountain ranges in the HMA where the majority of the perennial water sources occur. There are two areas in the northern portion of the HMA where wild horses have been observed to travel 10-12 miles from the feeding areas to water. During periods of high temperatures and/or drought, this abnormal trailing distance to and from the watering sources may place a large amount of stress on the animals and might lower the health and viability of the population.

The western boundary and a portion of the eastern boundary of the HMA is fenced (see Map 4). A fenceline on the southern boundary was constructed during FY 85, and a portion of the northern and eastern boundaries was constructed during FY 86 (see Map 5). Currently, there are no interior fences and none are planned within the HMA. Any additional fences other than those already planned could result in disruption of the herd's normal movement patterns.

(3) Habitat

The vegetation in the HMA is characterized by shadscale-budsage and greasewood types in the valley bottoms, big sage-grass types at the moderate elevations, and big sage-low sage and juniper-sagebrush types at the higher elevations. The grasses found in the HMA include cheatgrass, Indian ricegrass, squirreltail, needlegrass, wheatgrass, fescue, and blue grass.

The HMA is located within the boundaries of the Blue Wing and Seven Troughs Allotments. Ecological status and trend has been estimated (1979) for the allotments as follows:

	Ecological Status (% of Allotment)				Trend Direction (% of Allotment)	
Allotment	Early Seral	Mid-Seral	Late Seral	PNC 1/	Stable	Downward
Blue Wing	40	38	20	2	78	22
Seven Troughs	45	35	15	5	5	95

1/ PNC = Potential Natural Community

A limited number of rangeland monitoring studies were established in the HMA before 1984. Consequently, there is very little data available to form valid conclusions on plant composition, utilization levels of forage, and trend of the ecological sites in the area. With the approval of the CRMP Plan in 1984, an intensive monitoring program was initiated. The monitoring plan which outlines the key areas, management objectives, type of studies to be utilized, and the schedule for conducting and evaluating the studies is an appendix to this plan (see Appendix 11).

Documented direct observations of forage consumption by wild horses and burros are nonexistent in the HMA.

Studies conducted in the southwest vegetation type indicate that under ordinary range conditions 80 to 85 percent of the diet (on a dry weight basis) of wild horses consists of grasses and grasslike plants and that they consume more browse than they do forbs (Zarn 1977). Hall (1972) determined that the major forage items utilized on the Pryor Mountain Wild Horse Range in Montana during the spring, summer, and fall periods were grass species, whereas during the winter period the major forage items were browse species with grass species being utilized where available. The preferred grasses were bluebunch wheatgrass (Agropyron spicatum) and Sandberg bluegrass (Poa secunda) and the preferred browse species were saltbush (Atriplex spp.), gray rabbitbrush (Chrysothamnus nauseosus), and big sagebrush (Artemisia tridentata). The forage items present in the Pryor Mountains are somewhat similar to those found in the HMA and may be indicative of the preferred forage species of this area.

In general, grass species in the Pryor Mountains were the staple of wild horse diets throughout the spring, summer, and fall, and forb and browse species were of secondary importance. During the winter this order of preference was generally reversed. Forbs were utilized more heavily in the Salmon, Idaho and Winnemucca Districts whereas shrubs were more heavily utilized in the Ely District (USDI, BLM, Winnemucca District Office, Blue Wing URA).

Browning (1960) examined 20 burro stomachs to determine their forage preferences in Cottonwood Canyon of Death Valley National Monument. He reported that forbs comprised almost 65 percent of their spring diet and browse made up over 75 percent of their fall diet. Grass occurred in about half of the stomachs and amounted to 10 percent in both spring and fall diets.

McMichael (1964) examined the stomach contents of nine burros collected in February, April, May, and July. Laboratory analysis revealed that the stomach contents consisted of one percent grass, 11 percent shrubs, and 88 percent forbs.

Tables 1 and 2 list the stomach contents of two other burro studies conducted by the California Department of Fish and Game. Both studies confirm Browning's results in that forbs comprise a large percentage of their spring diet while browse made up a large percentage of their fall diet.

Data on the food habits for wild horses and burros in the HMA is notably lacking.

Table 1

Food Items Eaten By 19 Feral Burros
Collected From The Death Valley National Monument, 1959.
(Information From California Department of Fish and Game).

Item	Fall		Spring	
	Vol. %	Freq.	Vol. %	Freq.
Bur sage (Franseria dumosa)	52.5	9	13.1	6
Unidentified forbs (stems)	13.5	11	49.4	9
Grass stems (leaf stems)	10.0	7	7.8	4
Aster (Aster abatus)	4.5	6	1.1	1
Atriplex (Atriplex polycarpa)	4.5	3	tr	1
Atriplex (A. confertifolia)	4.0	4	--	--
Cottonwood (Populus fremontii)	4.0	6	--	--
Desert thorn (Lycium sp.)	3.5	3	--	--
Burrobrush (Hymenoclea salsola)	1.5	1	1.7	2
Spiny hopsage (Grayia spinosa)	1.5	2	tr	1
Unidentified browse	0.5	2	--	--
Mormon tea (Ephedra viridis)	--	--	3.3	1
Wishbone bush (Morabilis bigelovii)	--	--	0.6	1
Buckwheat (Eriogonum fasciculatum)	--	--	4.4	6
Sedge (Cyperaceae)	--	--	2.2	1
Buckthorn weed (Amsinckia tessellata)	--	--	15.0	3
Rush bebbia (Bebbia juncea)	--	--	0.6	2
Atriplex (Atriplex sp.)	tr	2	0.6	3
Chorizanthe (C. brevicornu)	tr	4	tr	3
Phacella (Phacella sp.)	tr	1	--	--
Cryptantha (Cryptantha sp.)	tr	1	tr	2
Rabbitbrush (Chrysothamnus sp.)	tr	1	--	--
Matchweed (Gutierrezia sarothrae)	tr	1	--	--
Penstemon (Penstemon sp.)	tr	2	tr	1
Wild barley (Hordeum sp.)	--	--	tr	1
Filaree (Erodium cicutarium)	--	--	tr	2
Black brush (Coleogyne ramosissima)	--	--	tr	1
Mint (Labiatae)	--	--	tr	1
Brickellia (B. watsonii)	--	--	tr	1
Chaenactis (C. stevioides)	--	--	tr	1
Dalea (Dalea mollis)	--	--	tr	1
Ground-cherry (Physalis sp.)	--	--	tr	1
Pepper-grass (Lepidium sp.)	--	--	tr	1
Mint (Salvia sp.)	--	--	tr	1
Evening primrose (Oenothera sp.)	--	--	tr	1
Borage (Boraginaceae)	--	--	tr	1
Mustard (Cruciferae)	--	--	tr	1

TABLE 2
Food Items Eaten by 20 (Burros) China Lake - April, 1966. (Information from California Department of Fish and Game).

Item	Vol. %	Freq. 20
BROWSE:		
Spiny hop-sage sd. (Grayia spinosa)	trace	3
Fourwing saltbush sd. (Atriplex canescens)		1
Creosote bush lf. (Larrea divaricata)		1
Nevada ephedra st. (Ephedra nevadensis)		2
Unid. browse st.		4
Wishbone bush (Mirabilis bigelovii)	1.0	11
Burrobush (Hymencolea salsola)	trace	8
Browse subtotal	1.0	
FORBS:		
Unid. forbs (st, lf)	86.0	20
Buckthorn weed lf, hd, sd (Amsinckia tessellata)	11.0	19
Unid. compositae (hds)	1.0	10
Phacella pods & sd. (Phacella sp.)	trace	6
Gilia sd & st (Gilia sp.)		16
Fremont's chaenactis (Chaenactis fremontii)		15
Red-stem filaree (Erodium cicutarium)		15
Stickleaf pods & sds (Mentzelia sp.)		11
Pepper-grass pods (Lepidium nitidum)		5
Poppy sd. (Eschscholtzia sp.)		5
California mustard (Thelypodium laslophyllum)		3
Fringe-pod pods (Thysanocarpus sp.)		4
Buckwheat lf (Eriogonum sp.)		3
Snake's head bracts & sd (Malacothrix coulteri)		2
Wing-nut cryptantha sd (Cryptantha pterocarya)		2
Coreopsis sd (Coreopsis sp.)		1
California coreopsis sd (Coreopsis californica)		1
Loco weed pod & sd (Astragalus sp.)		1
Hog-fennel sd (Lomatium sp.)		1
Forb subtotal	98.0	
GRASS:		
Grass lf & st. (Gramineae)	1.0	13
Cheatgrass sd. (Bromus tectorum)	trace	2
Bentgrass spike (Agrostis sp.)		1
Grass subtotal	1.0	

In addition, the exact percentage of use by each group of ungulate is not currently known. As a result it will be extremely difficult to separate the effects of livestock and wild horse and burro use.

c. Other Biotic Components

(1) Livestock

Six range users operate within the boundaries of the HMA, utilizing the area as both a cow-calf and sheep operation. The allotments are licensed for seasonal and yearlong cattle use and sheep use from December through March. The maximum amount of active preference and actual licensed use by allotment is as follows:

Allotment	Kind of Livestock	Active Preference (AUMs)	Licensed Actual Use (AUMs)	Nonuse or Difference
Blue Wing	Cattle	21,460	16,992	4,468
	Sheep	2,869	2,357	512
	Total	24,329	19,349	4,980
Seven Troughs	Cattle	6,046*	5,837*	209
	Sheep	4,373	2,086	2,287
	Total	10,419	7,923	2,496

*896 of these AUMs are Exchange-of-Use privileges only.

A grazing management plan was developed for the Blue Wing-Seven Troughs allotments in the CRMP Plan. As the allotments comprise approximately 1,500,000 acres adjudicated for yearlong use and are void of interior fencing, it was not economically feasible or practicable to implement an intensive multiple pasture rest-rotation grazing system. The CRMP plan outlines specific seasons and areas-of-use for C-Punch Crop. as outlined below (see Map 6):

(a) Graze 350-400 head of livestock on the Seven Troughs Range from 4/1-10/31. These cattle will be moved north into the Kamma Mountains and Antelope Range and held from 11/1-3/31.

(b) Graze 150-200 head of livestock on the west side of the Selenite Range from 4/1-10/31. These cattle will be moved south and held in the Slough House area above Nixon from 11/1--3/31.

(c) Graze 550-600 head of livestock in the Nightingale and Shawave Mountains from 4/1-10/31. These cattle will be moved east to the Granite Springs Valley and held from 11/1-3/31.

(d) Graze 250-300 head of livestock on the east side of the Selenite Range from 4/1-10/31. These cattle will be held on the flats between the Selenites and the Lava Beds from 11/1-3/31.

(e) Graze 350-400 head of livestock in the Lava Beds, Blue Wing Mountains, and western slopes of the Seven Troughs Range on a rotating basis throughout the year depending on weather and forage conditions.

The sheep operations will be managed as they have in the past in accordance with their adjudicated areas and seasons-of-use.

This grazing plan will not be fully implemented until all of the proposed water developments and boundary fences are constructed (see Map 5). In the interim, the livestock operators will comply with the grazing plan to the extent possible and will be licensed below their active preference levels.

Management and distribution of cattle will be through riding, the manipulation of water, salting practices, and natural seasonal movement of the animals. Sheep will be managed through the use of herders and the flexibility of being able to follow the localized snowstorms within their areas-of-use (see Map 7). Occasionally water is hauled to better facilitate the use of the rangeland.

Forage preferences of wild horses and cattle (Bos taurus) were determined to be 59 to 75 percent identical in the Piceance Basin area of Colorado (Hubbard and Hansen 1976). Olsen and Hansen (1976) found that wild horse food items were 45 percent identical to cattle, and 27 percent identical to domestic sheep (Ovis ovis) in the Red Desert area of Wyoming. There did not appear to be any serious dietary overlap between wild horses and mule deer (Odocoileus hemionus) in Colorado or with pronghorns (Antilocapra americana) in Wyoming.

In the Granite Range near Elko, Nevada, Nawa (1978) found there was a 77 percent dietary overlap between cattle and wild horses, and only a three percent overlap between mule deer and wild horses. In the Paradise-Denio Resource Area, Winnemucca, Nevada, Smith (1978) found there was a 50 percent dietary overlap between cattle and wild horses, and a two percent overlap between antelope and wild horses.

A study of feral burros was conducted from November 1974 to August 1975 in the Saline Valley Region of Inyo

County in southeastern California. The major plant communities found in the Saline Valley, with the exception of the creosote bush, are also found in the HMA. A list of the plants occurring on vegetation transects and the preference for use of these plants by livestock and burros is shown in Table 3. All of the preferred and staple plants found in the Saline Valley are found in the areas where burros occur on the planning area with the exception of spiny menodora (Menodora spinescens), desert bitterbrush (Purshia glandulosa), and desert holly (Atriplex hymenelytra) (Kimsey and MacCarter 1976).

No full-scale studies have been done in Nevada of burro feeding habits. Information on dietary preference and plant composition is needed to fully understand the degree of competition that other ungulates are providing to wild horses/burros in the HMA.

(2) Wildlife

Wildlife species currently found on the Blue Wing-Seven Troughs HMA include mountain lion, bobcat, mule deer, antelope, coyote, sage grouse, California valley quail, chukar, and a variety of nongame species. Those which principally compete with domestic livestock and wild horses and burros are mule deer, rodents, rabbits, and insects.

No estimates are currently available for numbers of rodents, rabbits, and insects using this area. The Nevada Department of Wildlife has estimated the following reasonable numbers of wildlife and the corresponding AUM demand in the HMA:

Species	Reasonable Numbers		AUM Demand
Antelope	32		77
Mule deer	399		1,197
Bighorn sheep *	44		106
		TOTAL	1,380

* At the present time there are no bighorn sheep inhabiting the HMA.

No definitive studies have been done on the HMA regarding forage utilization by rodents, rabbits, and insects. However, estimates by authorities in the states of Washington and Arizona of forage utilized by these classes of primary herbivores shows consumption could approach in excess of 13,000 AUMs per year in an area as large as this HMA (Hoem 1974).

Utilization of the vegetation by domestic livestock and wild horses and burros in riparian and other crucial wildlife habitat areas is estimated to be moderate to heavy (Winnemucca District Office Files).

TABLE 3. Plants occurring on vegetation transects, preference for use of plants by livestock and burros, and available pound per acre forage value: Saline Valley, California. July 1975.

Scientific	Common	Symbol	Livestock		Burro
			Value 1/	Lbs/Ac	Preference 2/
Allenrolfea occidentalis	pickleweed	ALOC	U	0	U
Hymenoclea salsola	burrobush	HUSA	L	2	LV
Larrea tridentata	creosotebush	LATR	L	0	LV
Atriplex confertifolia	shadscale	ATCO	P	5	PR
Grayia spinosa	hopsage	GRSP	P	5	PR
Menodora spinescens	spiny menodora	MESP	P	5	PR
Tetradymia sp.	horsebrush	TET	L	0	LV
Dalea polyadenia	nevada dalea	DAPO	L	0	LV
Ephedra nevadensis	nevada tea	EPNE	L	5	LV
Mallow parviflora	cheeseweed	MAPR	L	0	LV
Haplopappus spp.	goldenbush	HAP	L	0	LV
Eurotia lanata	winterfat	EULA	P	10	PR
Artemisia tridentata	big sage	ARTR	L	2	LV
Chrysothamnus spp.	rabbitbrush	CHR	L	0	LV
Eriogonum umbellatum	sulfur flower	ERUM	L	2	LV
Elymus cinereus g.	basin wild rye	ELCI	S	10	ST
Stipa speciosa	desert needlegrass	STSP	P	20	PR
Lupinus spp.	lupine	LUP	S	5	ST
Astragalus spp.	locoweed	AST2	L	2	LV
Purshia glandulosa	desert bitterbrush	PUGL	P	5	PR
Aster spp.	desert milk aster	AST	U	2	U
Juniperus osteosperma	juniper	JUOS	U	0	U
Distichlis spicata	saltgrass	DIS	-	10	LV
Atriplex hymenelytra	desert holly	ATHY	S	5	ST

1/ U = Unknown; P = Primary; S = Secondary; L - low in decreasing order of value to livestock

2/ U = Unknown; PR = Preferred; ST = staple; LV = low value, in decreasing order of preferred consumption by burros

d. Problem-Issue Summary

The following is a summary of present and potential issues and problems associated with the well being of the wild horse/burro population and their habitat:

(1) There are no physical barriers separating the Lava Beds-Seven Troughs subunit from the northeastern checkerboard HUA. Once Appropriate Management Levels (AML) are reached (i.e, zero animals in the checkerboard area), horses will naturally drift back into the checkerboard area which would require yearly removals, to maintain the AML.

(2) In the attempt to reach the AML of burros, there is a possibility that the genetic pool of spotted and/or pinto animals will be reduced to a level that will not ensure the perpetuation of the marked population.

(3) There is little information available regarding factors affecting the demographic characteristics of the population of wild horses/burros.

(4) The lack of reliable water sources in certain areas of the HMA is causing the animals to travel long distances from the feeding areas in the summer months, which results in undue stress being placed on the population and is affecting their health and viability.

(5) Interior fencing, if proposed within the boundaries of the HMA, would disrupt the wild and free-roaming characteristics of the animals.

(6) Approximately 41 percent of the public lands in the planning area is estimated to be in an early seral ecological status and approximately 37 percent of the area is in a mid-seral status (1979 estimate). Approximately 39 percent of the public lands are estimated to be in a downward trend (1979 estimate). See Appendix 27.

(7) Site specific data on food habits for wild horses/burros in the HMA is notably lacking. It is difficult to separate livestock and wild horse/burro use as the exact percentage of use by each group of ungulate is not known.

(i) No studies have been done regarding forage utilization by rodents, rabbits, and insects.

(ii) Utilization of the vegetation in crucial wildlife habitat areas is estimated to be moderate to heavy.

(8) Livestock operators in the Blue Wing and Seven Troughs Allotments are currently licensed below their active preference because wild horses/burros are currently consuming forage which would otherwise be available for domestic livestock.

II. Management Objectives

A. Habitat Objectives

1. Maintain or improve the rangeland ecological status within the HA utilizing the criteria and timeframes established in the Blue Wing-Seven Troughs Monitoring Plan 1985 (Appendix 27).

2. Provide water for wild horses/burros throughout the HMA, where possible to yield a better distribution of animals utilizing the habitat, therefore reducing concentrated or overuse of particular areas.

B. Animal Objectives

1. Maintain a healthy herd of animals within the AML of 877 horses and 143 burros.

2. Establish forage use levels for the wild horse/burro population (i.e., refine the AML) through monitoring of the wild horse/burro habitat.

3. Maintain the wild free-roaming characteristics of the animals in the HMA.

4. Preserve and perpetuate the unique spotted and pinto burro population.

5. Acquire data on the demographic characteristics of the wild horse/burro populations to include information on sex ratio, age structure, young/adult ratio, and actual use. These parameters will be analyzed to determine natality, mortality, and rate of increase.

6. Determine the dietary preferences of wild horses/burros within the HMA.

7. Determine distribution and movement patterns for the wild horse/burro population in the HMA.

III. Management Methods to Achieve Objectives

A. Habitat Planning Objective # II.A.1.: Maintain or improve the rangeland ecological status within the HA utilizing the criteria and timeframes established in the Blue Wing-Seven Troughs Monitoring Plan 1985 (Appendix 27).

Management Methods:

1. The monitoring plan outlines the type of studies to be utilized, the allotment objectives and schedule for the interim (first five years), short term (first 10 years) and long term (35 years) time periods, and the schedule for conducting the allotment evaluation. Those components relating to wild horses/burros include vegetation utilization, frequency, trend, and ecological status.

2. Analysis of data derived from the monitoring plan will be used to evaluate the attainment of HMAP objectives, key area objectives, and to determine which objectives were not met (if applicable), and identify why the objectives were not met (if applicable).

3. Subsequent analysis and changes to the AML of wild horses and burros, livestock and wildlife numbers, the grazing system or monitoring plan will be made on a case by case basis in consultation with the permittees and other affected interests. Table IV of the monitoring plan shows how evaluation of monitoring results may be used to effect management. Changes will be in the form of adjustments in numbers on a proportionate share basis, changes in distribution patterns, and adjustments of periods-of-use.

4. If monitoring data shows a lack of available forage, treat approximately 10,000 acres of sagebrush in the eastern half of T. 32 N., R. 28 E., and approximately 10,000 acres in the northern half of T. 26 N., R. 25 E., by burning or chemical control (whichever is the most cost effective and/or least detrimental). Construct an electric fence around the treated areas and allow them to receive two years rest.

B. Habitat Planning Objective #II.A.2.: Provide water for wild horses/burros throughout the HMA, where possible to yield a better distribution of animals utilizing the habitat, therefore reducing concentrated or overuse of particular areas.

Management/Methods:

1. Develop a series of springs, pipelines, and wells recommended by the CRMP committee to improve water distribution throughout the HMA as outlined below:

   a. Judges Place Spring and Pipeline - Develop the spring at Judges Place (T. 32 N., R. 29 E., Sec. 20) and construct approximately 5 (five) miles of pipeline in order to provide water on the flats at the north end of the Seven Troughs Range and south end of the Kamma Mountains, while maintaining the meadow in its present condition.

   b. Cow Creek Exclosure Spring - Develop the spring located outside the western wildlife exclosure in T. 31 N., R. 28 E., Sec. 12.

c. Trail Canyon Well - Conduct a well site investigation in the middle of T. 31 N., R. 26 E., and construct a well if feasible, in order to provide water in the vicinity of Middle Mountain.

d. Rocky Canyon Well - Conduct a well site investigation in the northern half of T. 31 N., R. 30 E., and construct a well if feasible.

e. Twin Buttes Mine Spring and Pipeline - Develop the spring at Twin Buttes Mine (T. 30 N., R. 26 E., Sec. 1) and construct approximately three miles of pipeline in order to provide water on the flats south of Middle Mountain.

f. Antelope Siding Well - Conduct a well site investigation in southern half of T. 35 N., R. 30 E., and construct a well if feasible.

2. Inventory all water resources in the HMA and identify all water quality, quantity, and wetland problems. Plan and implement protection or enhancement practices such as fencing for identified problem areas.

C. Animal Planning Objective #II.B.1.: Maintain a healthy herd of animals within the AML of 877 horses and 143 burros.

Management Methods

1. The wild horse and burro population will be adjusted to an appropriate management level of 640 horses and 104 burros in the Lava Beds/Seven Troughs subunit and 237 horses and 39 burros in the Nightingale/Shawave subunit in accordance with the Sonoma/Gerlach MFP decision and the Lovelock CRMP group recommendation.

2. A total count inventory will be conducted on the HMA immediately prior to the gathering operation to determine the exact number of animals to be removed. Gatherings will be conducted yearly for five years after attainment of the AML to accurately reflect forage use levels by the wild horse/burro population for monitoring studies.

3. The BLMs management objective directed by PL 92-195 as amended by PL 94-579 and PL 95-514 is to "protect and manage wild free-roaming horses and burros as components of the public land" and to "achieve and maintain a thriving natural ecological balance on the public lands." It also states that "all management activities shall be at the minimal feasible level." With this in mind, management will not consider introducing specific blood lines to establish certain lineage patterns that

were not indigenous to the population in the HMA. Introduction of new genetic lines will be left to the natural selection process and/or wandering nature of the horses and burros themselves.

D. Animal Planning Objective #II.B.2.: Establish forage use levels for the wild horse/burro population (i.e., refine the AML) through monitoring the wild horse/burro habitat.

Management Methods

1. Refinement of the AML will be based upon an analysis of monitoring data. Monitoring data will be used to evaluate attainment of HMAP objectives and key area objectives (i.e. identify which objectives were not met, if applicable, and identify why the objectives were not met, if applicable).

2. If the key area objectives are not met, changes will be made to the grazing system, and/or to the AML on a proportionate share basis with domestic livestock after consultation with the permittees, CRMP group, and other affected interests.

E. Animal Planning Objective #II.B.3: Maintain the wild free-roaming characteristics of the animals in the HMA.

Management Methods

1. All range improvement projects proposed for the HMA will be analyzed in depth to determine if construction of the projects will impact the wild free-roaming characteristics of the horses and burros. Wild horse and burro distribution, seasonal movements, daily movements, and home ranges will also be preserved.

   The integration of this objective with other resource programs will best be facilitated through the interdisciplinary coordinated resource team approach when developing and implementing projects. During the analysis the immediate impacts as well as the cumulative impacts must be realized. Interior fencing projects should be discouraged whenever possible, unless they can be designed to preserve the normal distribution and movement patterns for the majority of the animals inhabiting the area in accordance with NSO Manual Supplement 4730 (Management Considerations).

2. Construct approximately 24 miles of fenceline starting at the southeast corner of T. 34 N., R. 31 E., continuing west for six miles to the southwest corner of this township, then continue south for 18 miles along the adjudicated allotment boundary line between Seven Troughs and Majuba Allotments to the existing Coal Canyon-Poker Allotment boundary fence. This will separate the

HMA from the majority of the checkerboard lands and reduce the drift and necessity of yearly removals from private property. This project is in addition to the fencelines proposed by the Lovelock CRMP committee.

F. Animal Planning Objective #II.B.4.: Preserve and perpetuate the unique spotted and pinto burro population.

Management Methods:

1. The current population of burros in the HMA is primarily composed of spotted or pinto burros. Every effort will be made during the gathering operation to cut back the marked animals and try to capture only the solid colored burros. This will be a specification in the gathering contract. Controlled selection during gathering should insure a substantial representation of the marked animals.

G. Animal Planning Objective #II.B.5.: Acquire data on the demographic characteristics of the wild horse/burro population to include information on sex ratios, age structures, mortality and natality (rate of increase), and actual use.

Management Methods

1. Studies to collect information relative to sex ratios, age structures, rates of increase, distribution and movement patterns, actual use and food habits, and the validity of total population counts will be established for the wild horse and burro population in the Blue Wing/Seven Troughs HMA.

   For more details on types, frequency and intensity of study methods refer to Section IV, Evaluation and Revision of this plan.

H. Animal Planning Objective #II.B.6.: Determine the dietary preferences of wild horses/burros within the HMA.

Management Methods

1. A study will be established in the HMA which will be used to quantify the seasonal dietary composition of the wild horse/burro population. The study site locations will correspond with the key area locations identified in the Blue Wing/Seven Troughs Monitoring Plan (refer to Appendix 27).

I. Animal Planning Objective #II.B.7.: Determine distribution and movement patterns for the wild horse/burro population in the HMA.

Management Methods

1. A comprehensive study will be conducted to secure an understanding of the seasonal movements and distribution of the wild horse/burro population in the HMA. This data should provide

the information to accurately delineate the home ranges of the bands within the two management subunits.

IV. Evaluation and Revision

Data necessary to effectively manage the wild horse and burro population is virtually unavailable for the HMA. The following studies have been initiated or will be established to evaluate the effectiveness of the management methods identified in this plan to meet the objectives. Refer to the Blue Wing/Seven Troughs Monitoring Plan (Appendix 27) to find the time of year and frequency that the following studies will be read as well as the key area locations.

A. Habitat Study Methods

1. Climatological

Climatological data will be obtained from a current hydrological study being carried out in the Cow Creek drainage area (BLM 1979a). This data will be supplemented by data published annually by the National Oceanic and Atmospheric Administration. Substations that will be used include Lovelock, Rye Patch Dam, and Jungo-Meyer Ranch.

2. Frequency and Trend

One of the parameters to show changes in plant composition (trend) is frequency. Frequency data will be collected using the quadrant-frequency method as described in the Nevada Range Monitoring Procedures Handbook. Data will be stored and analyzed using standard statistical analysis procedures as a part of the Bureau ADP computer program. When a statistically significant change in frequency data is noted, the double-sampling transect will be read, as described in the National Range Handbook (SCS 1976).

3. Ecological Status

Ecological status (formerly referred to as "ecological range condition") was determined on all of the key management areas (see Map 8) discussed in the monitoring plan. The double-sampling methods as described in the the BLM Manual Handbook H-4410-1 supplement to the National Range Handbook (SCS 1976) will be used to determine changes in ecological status. Frequency data will be used in combination with the ecological status data to determine trend.

4. Utilization

Vegetation utilization data, which includes utilization made by livestock, wildlife and wild horses/burros will be collected using the key forage plant method. Methodology for collecting this data is described in the Range Monitoring Handbook. Utilization cages will be placed on all key areas for calibration purposes. Refer to Appendix 27 and Map 8 for the location of the key areas.

In order to determine the degree of use made by livestock/wild horse/burro, utilization data will be collected twice a year, once just prior to livestock turnout and once just after livestock are removed.

B. Wild Horse and Burro Population Study Methods

1. Home Range and Seasonal Movements

A comprehensive study will be conducted to secure an understanding of home ranges and seasonal movements of wild horse/burros. Twenty wild horses will be captured and fixed with radio telemetry collars either during removal roundups or special gatherings conducted after the AML has been attained. These animals will be taken from four areas (five from each) in the HMA. Each group of five animals will be composed of three females in the 2-5 year age class and two males in the 2-7 year age class. Information that will be obtained from these horses include: reproductive rate, mortality rate, extent of immigration and emigration, intra- and interband movements. This information will be collected for a minimum of four times each year (i.e. spring, summer, fall, and winter) for a period of two to four years depending on the life of the collar battery.

2. Productivity and Survival

General productivity indices can be estimated from the relative age composition (percent foals) of the HMA population as per NSO Manual 4730. Aerial censuses will also secure the desired data, as well as field observations. Therefore, aerial censuses designated to obtain wild horse home range and seasonal movement patterns can also supply relative age composition.

First year survival rates can be approximated through shrinkage of foal incidence between post-parturition composition surveys and parturition surveys (Wolfe 1980). Such surveys will be conducted with a helicopter in July and January in conjunction with seasonal movement and home range inventories.

Age classification surveys will be conducted utilizing ground observations twice each year for the first three years after the AML of animals is reached. These surveys will be conducted once in late summer immediately following the peak foaling period and once in late winter when the foals are approaching one year of age. During these surveys animals will be recorded in three classifications: adults, yearlings, and foals. This information will be utilized to perform calculations described in the 4730 Manual necessary for determining the reproductive rate, fecundity, mortality, and rate of increase for the wild horse/burro population in the HMA.

3. Population Estimates-Actual Use

Population estimates should be conducted at least once every 5 years with a helicopter in accordance with NSO Manual 4730. However, it is anticipated that population estimates will be kept current on a yearly basis. These estimates will be derived from data collected in the manner as outlined in NSO Manual 4730. These estimates will be analyzed in conjunction with other wild horse studies to obtain a more reliable estimate of population numbers.

4. Aerial Censuses-Total Count Accuracy Rate

A total count aerial census will be conducted yearly for a minimum of three years or until such time as the AML appears to be consistent with the habitat. Each census will be conducted in such a manner to assure the highest degree of consistency with previous inventories. The majority of past censuses have utilized a Bell 47G3B-1 helicopter to count the animals with one observer and the pilot.

The census will place the animals in adult, foal, and if possible, yearling categories. Locations of the horses and burros, weather conditions, and flight patterns will be recorded.

Since there are no interior fences separating individual populations of animals in the HMA, the mark-resight estimation method (Lincoln-Petterson Index) will be utilized only on an experimental basis in conjunction with gatherings to determine its validity on non-closed populations. The estimated total herd size and sighting rate will be calculated as outlined in the NSO Manual 4730.

An attempt will also be made to estimate the true number of animals in the HMA by calibrating an index from removal data utilizing a direct count pre-capture census, capture of horses and burros, and a post-capture census as described in NSO Manual 4730. It is anticipated that this method will provide the most accurate estimate of the population size in the HMA.

5. Sex Ratio-Age Structure Determination

Both the sex ratio and age structure of the population of wild horses/burros in the HMA will be estimated from an analysis of capture data obtained whenever excess animals are removed. This information will be further supplemented as described in NSO Manual 4730.

6. Animal Condition

The condition of the wild horse/burro populations will be determined from visual observation of the animals. Conformation or personal judgments as to animal type will be avoided in this

determination but the presence and significance of physical deformities will be noted. Factors which will be considered in evaluating the condition of the animals include presence or absence of body fat, appearance of skin and hair, and soundness of legs and feet. While it is recognized that an evaluation of animal condition is highly subjective, the proportion of animals in each condition class (good, fair, poor) will be determined and recorded.

7. Dietary Composition

There are three accepted techniques which can be used for quantifying diet composition: 1. fecal analysis, 2. analysis of stomach contents and 3. daily observation of actively foraging animals. Fecal analysis has been widely used because the other two techniques are often expensive, time consuming, or impractical for use on free-ranging animals. It is a generally accepted fact that data obtained from fecal analysis is not highly accurate, but it will suffice for such purposes as ranking the dietary importance of various plant species and comparing the diets of various herbivores. The fecal samples will be collected a minimum of four times per year by district personnel to yield a seasonal diet, and sent to a contracted university for the microhistological analysis of the dietary materials.

C. Evaluation

Censuses and habitat studies will contain the primary data used to determine the management level of the wild horse/burro population. This information can be entered into the Proper Forage Use Level Formula to calculate the proper number of wild horses/burros which should be managed within the habitat. Utilization studies also will be used to identify any wild horse/burro distribution problems. Comparison of censuses will be utilized to indicate the population trends. Results of the frequency trend plots will estimate changes in plant composition, which in turn affects the ecological status of the vegetation in the habitat. This information may indicate a need for adjustments in the number of herbivores utilizing the HMA including the AML of wild horses/burros.

The Lovelock CRMP group will meet yearly in January to review the progress of this plan and the other activity and monitoring plans. Data collected from the various studies will be incorporated into the HMAP as soon as it is available.

D. Revision

Revision of this plan may be necessary when adequate studies data is gathered which indicates that changes to the grazing system, Monitoring Plan, and/or the AML of animals are warranted because key area and/or resource objectives are not being met. This will be determined by the Area Manager, Supervisory Range Conservationist, and District Wild Horse/Burro Specialist in consultation with the CRMP group.

If the habitat studies data indicates that additional forage is available, proportionate increases will be given to wild horses/burros, wildlife, and livestock.

V. Coordination

Coordination within the Winnemucca District Office is essential for the success of this HMAP. All planned activities, management objectives and actions, must complement and be in harmony with the other biotic components presently and potentially utilizing the planning area. Time and manpower of district personnel must be judiciously planned and coordinated to eliminate any duplication of efforts in conducting and evaluating multi-purpose studies whenever possible. The objectives of the Allotment Management Plan and Habitat Management Plan should be written to complement the objectives outlined in this plan.

A. Cooperative Agreements

1. Individuals or Organizations

The majority of the unfenced private lands located within the boundaries of the planning area are owned by Southern Pacific Land Company. A small percentage of unfenced private land limited mostly to stringers of 40 acre parcels along stream courses or around springs is owned by C-Punch Corporation. Both have requested the BLM to remove animals from their private holdings and will not enter into a cooperative agreement for maintenance of animals on their land.

B. Funding

All actions undertaken pursuant to this plan are contingent upon available funding. Funding for range improvement projects will be secured from various bureau programs, the District Advisory Board, and contributed monies from livestock permittees. The possibility also exists that some funding may be provided by the Nevada Governor's Wild Horse Committee appointed to administer the Heil Fund bequest. These monies could be used for animal and habitat studies.

VI. Appendices

1. Literature Cited
2. List of Maps
3. Synopsis of Census Data
4-25. Age Structure and Color Types
26. Glossary of Terms
27. Monitoring Plan

Appendix 1. Literature Cited

_____. 1983b. Wildlife Habitat Studies program procedures for the Winnemucca District.

Bergeund, A.T. "Aerial Winter Census of Caribou." J. Wildlife Management. 27 (1963):438-449.

Browning, B. 1960. "Preliminary Report of the Food Habits of the Burro in Death Valley National Monument." Desert Bighorn Council, 4th Annual Meeting.

Caughley, G. "Analysis of Vertebrate Populations." New York: J. Wiley & Sons. 1977.

Frei, M.N., J.S. Peterson, and J.R. Hall. "Aerial Censes of Wild Horses in Western Utah." J. Range Management. 32 (1):8-11.

Gilbert, P.F. and J.R. Greib. "Comparison of Air and Ground Deer Counts in Colorado." J. Wildlife Management. 21 (1957):33-37.

Golley, F.B., and H. Buechner. "A Practical Guide to the Study of the Productivity of Large Herbivores." IBP Handbook No. 7. Oxford and Edinburgh:Blackwell Scientific Publications. 1968.

Hall, R. 1972. Wild Horse: Biology and Alternatives for Management, Pryor Mountain Wild Horse Range. BLM. Billings, Montana.

Hoem, R. 1974. Owyhee Desert Wild Horse Management Plan. BLM. Winnemucca, Nevada.

Hubbard and Hansen. 1976. "Diets of Wild Horse, Cattle, and Mule Deer in the Piceance Basin, Colorado." In Review, Journal of Range Management.

Kinsey and MacCarter. 1976. Wild Free-Roaming Burros of Saline Valley. Available at Winnemucca, NV., BLM office.

LeResche, R.E., and R.A. Raush. "Accuracy and Precision of Aerial Moose Counting." J. Wildlife Management. 38 (1974):175-182.

McMichael. 1964. Studies of the Relationship Between Desert Bighorn and Feral Burros in the Black Mountains of Northwestern Arizona. M.S. Thesis, University of Arizona.

Nawa. 1978. "Foods of Wild Horses, Deer, and Cattle in the Granite Ranges, Nevada." BLM. Elko, NV.

Olsen and Hansen. 1976. "Food Relations of Wild Horses to Livestock and Big Game, Red Desert, Wyoming ". Journal of Range Management.

Siniff, D.B., J.R. Tester, R.D. Cook and G.S. McMahon. 1981. "Census Methods for Wild Horses and Burros." Interim Report. Bureau of Land Management Contract No. AA851-CTO-52. 46 pp.

Smith, G. 1978. Results of Fecal Analysis Study. BLM, Winnemucca, NV.

Smith, Jones, Roney, Pedrick. 1983. Prehistory and History of the Winnemucca District. BLM.

USDA Soil Conservation Service. 1976. National Range Handbook.

USDI BLM. 1979a. Nevada Watershed Studies Annual Report.

USDI BLM. 1979. Unit Resource Analysis for Blue Wing Planning Unit. Winnemucca, NV.

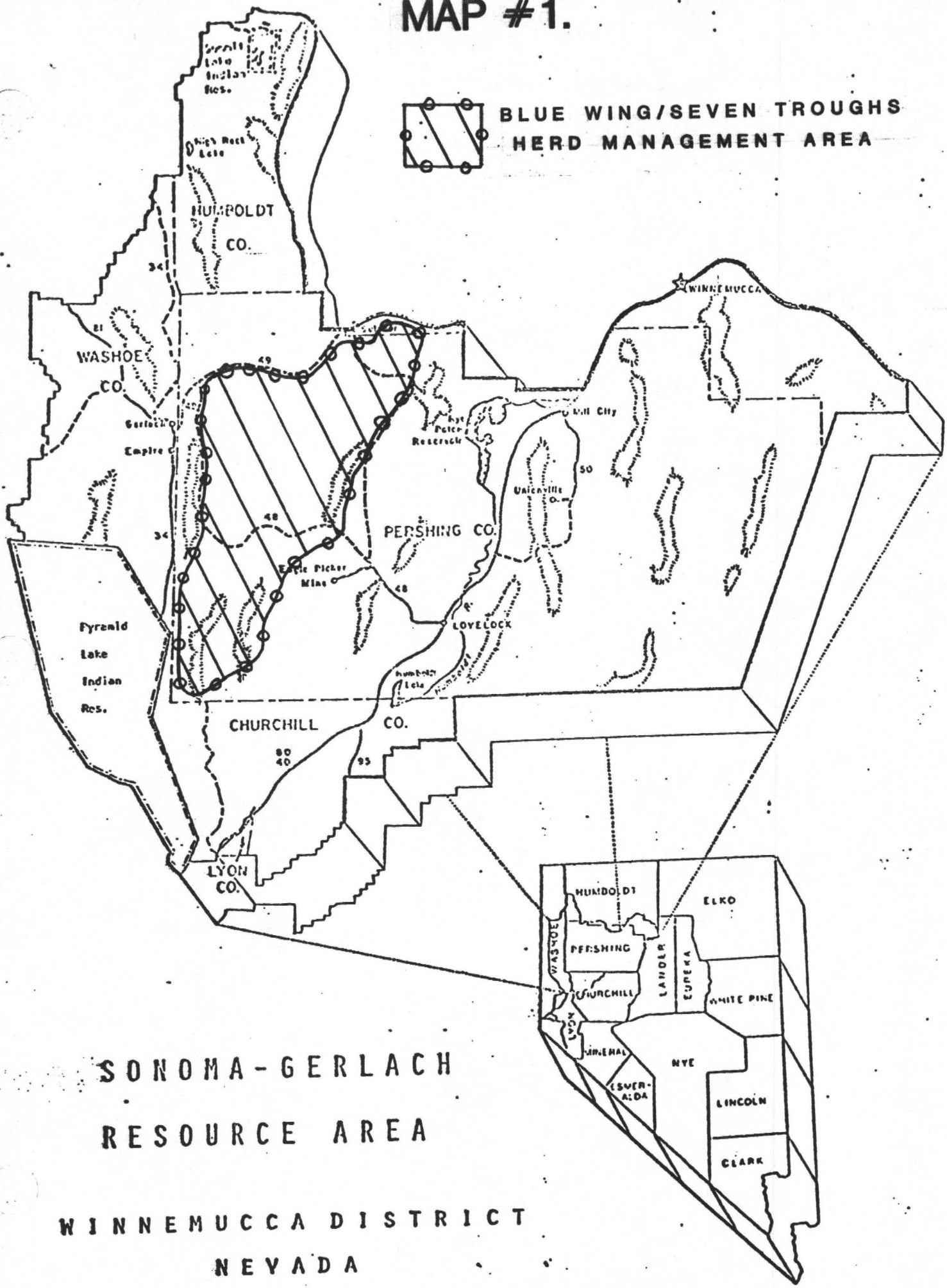
Wolfe, M.L., Jr. 1980. Feral Horse Demography: A Preliminary Report. J. Range Management 33(5).

Zarn, Heller, and Collins. 1977. Wild Free-Roaming Horse - Status of Present Knowledge. Technical Note. BLM and USFS.

Appendix 2. List of Maps

1. Blue Wing/Seven Troughs Herd Management Area - General location
2. HMAP - Specific location, showing grazing allotments and land status
3. Original Unit Resource Analysis Herd Use Area Boundaries
4. Existing Range Improvements
5. Proposed Range Improvements
6. Cattle Grazing Plan
7. Sheep Operators Area-of-Use
8. Key Management Areas

MAP #1.

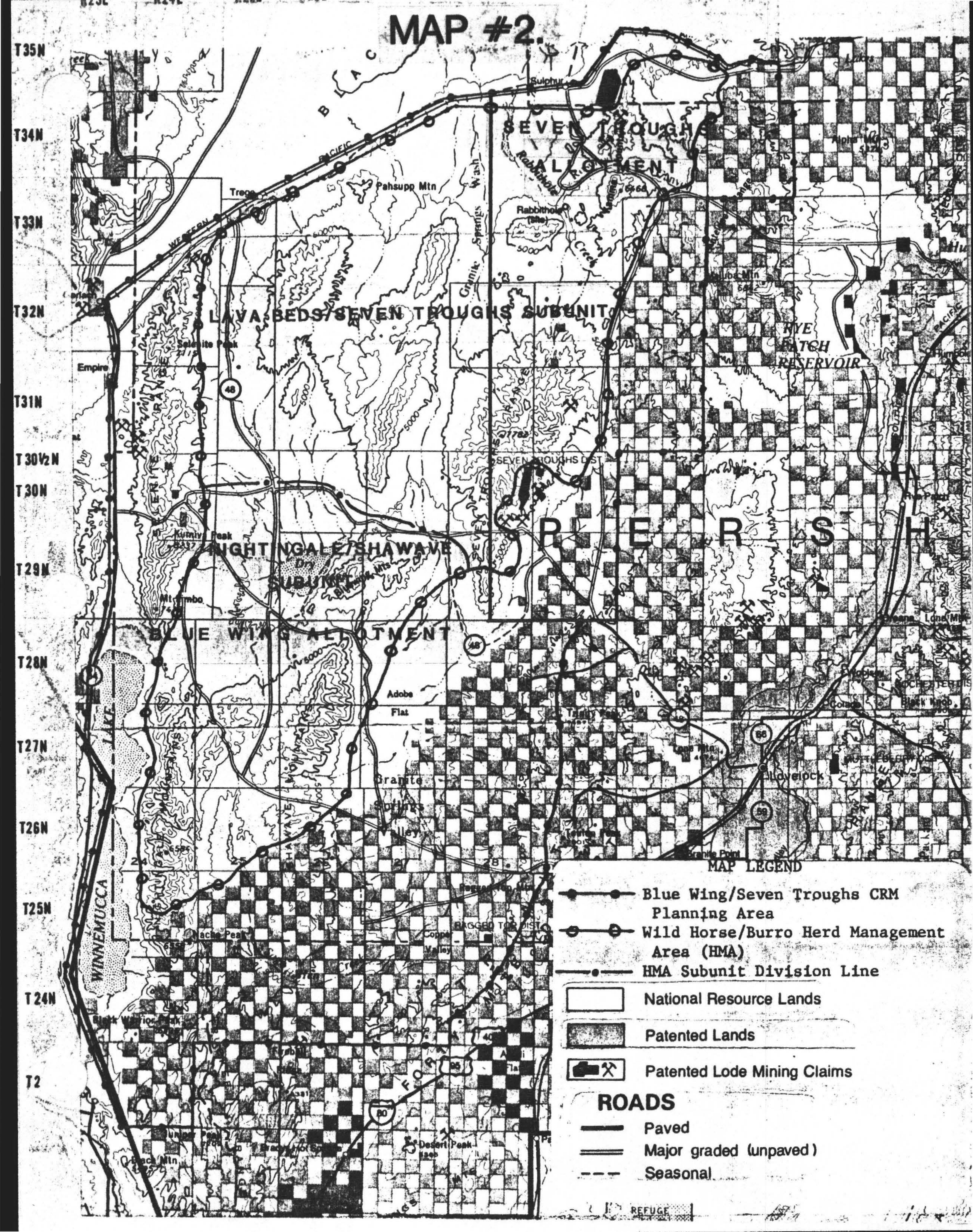


SONOMA-GERLACH

RESOURCE AREA

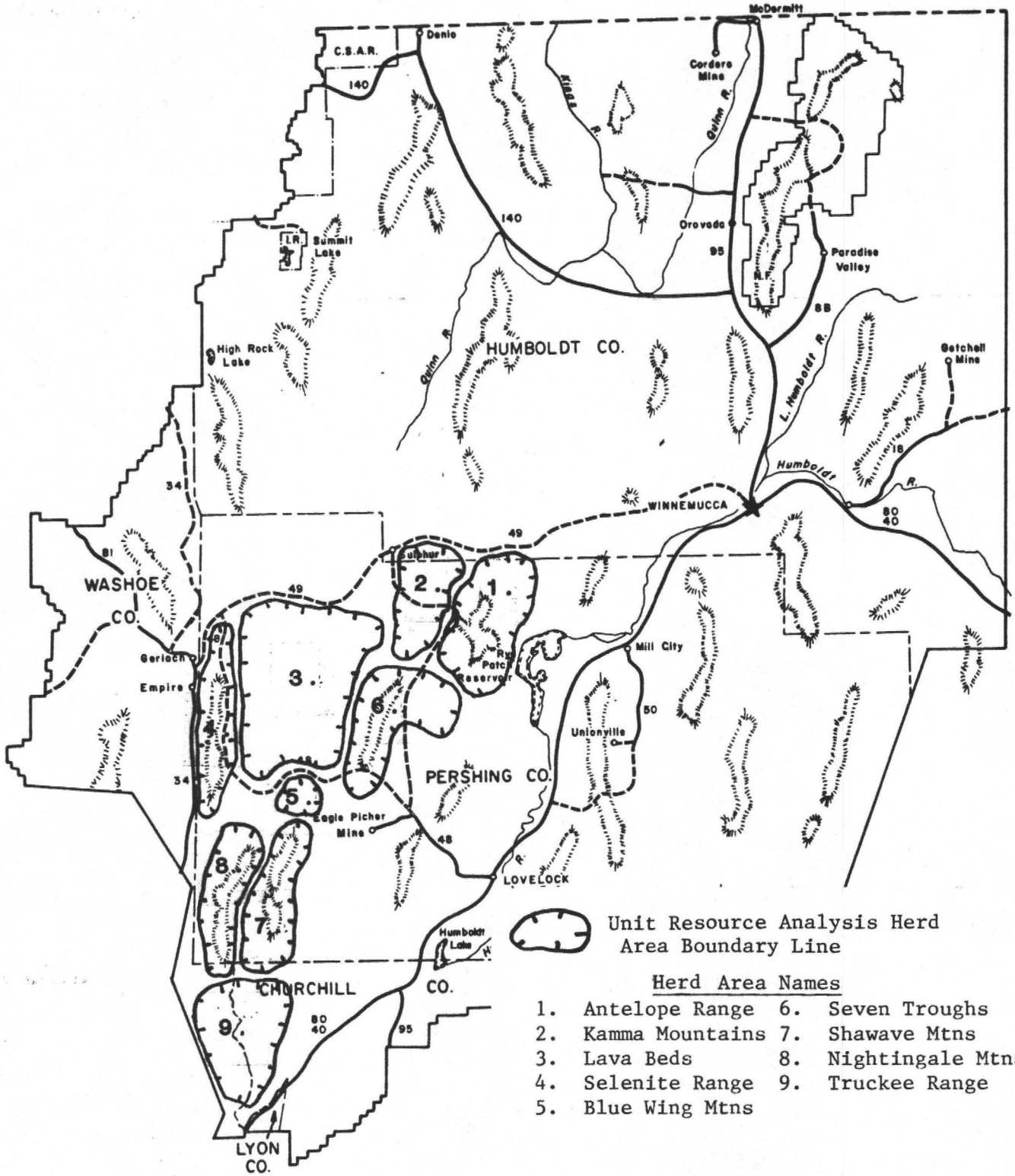
WINNEMUCCA DISTRICT

NEVADA



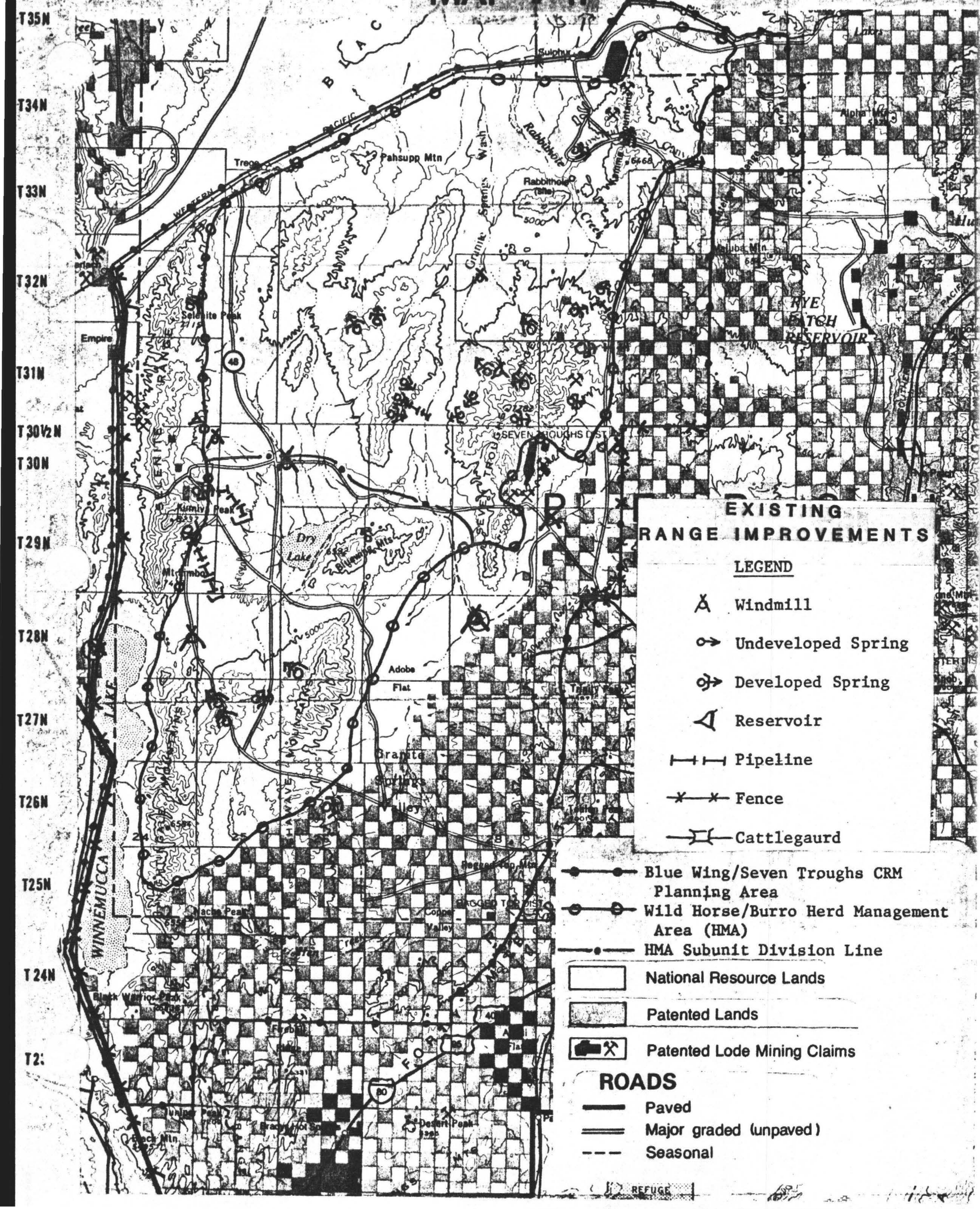
MAP #2.
SEVEN TROUGHS ALLOTMENT
LAVA BEDS/SEVEN TROUGHS SUBUNIT
NIGHTINGALE/SHAWAVE SUBUNIT
BLUE WING ALLOTMENT
RYE PATCH RESERVOIR
WINNEMUCCA LAKE
Pahsupp Mtn
Rabbithole
Trego
Sulphur
Empire
Adobe Flat
Granite Springs Valley
Lovelock
SEVEN TROUGHS DIST
RAGGED TOP DIST
Copper Valley
Desert Peak
Rochester
T35N
T34N
T33N
T32N
T31N
T30½N
T30N
T29N
T28N
T27N
T26N
T25N
T24N
MAP LEGEND
Blue Wing/Seven Troughs CRM Planning Area
Wild Horse/Burro Herd Management Area (HMA)
HMA Subunit Division Line
National Resource Lands
Patented Lands
Patented Lode Mining Claims
ROADS
Paved
Major graded (unpaved)
Seasonal

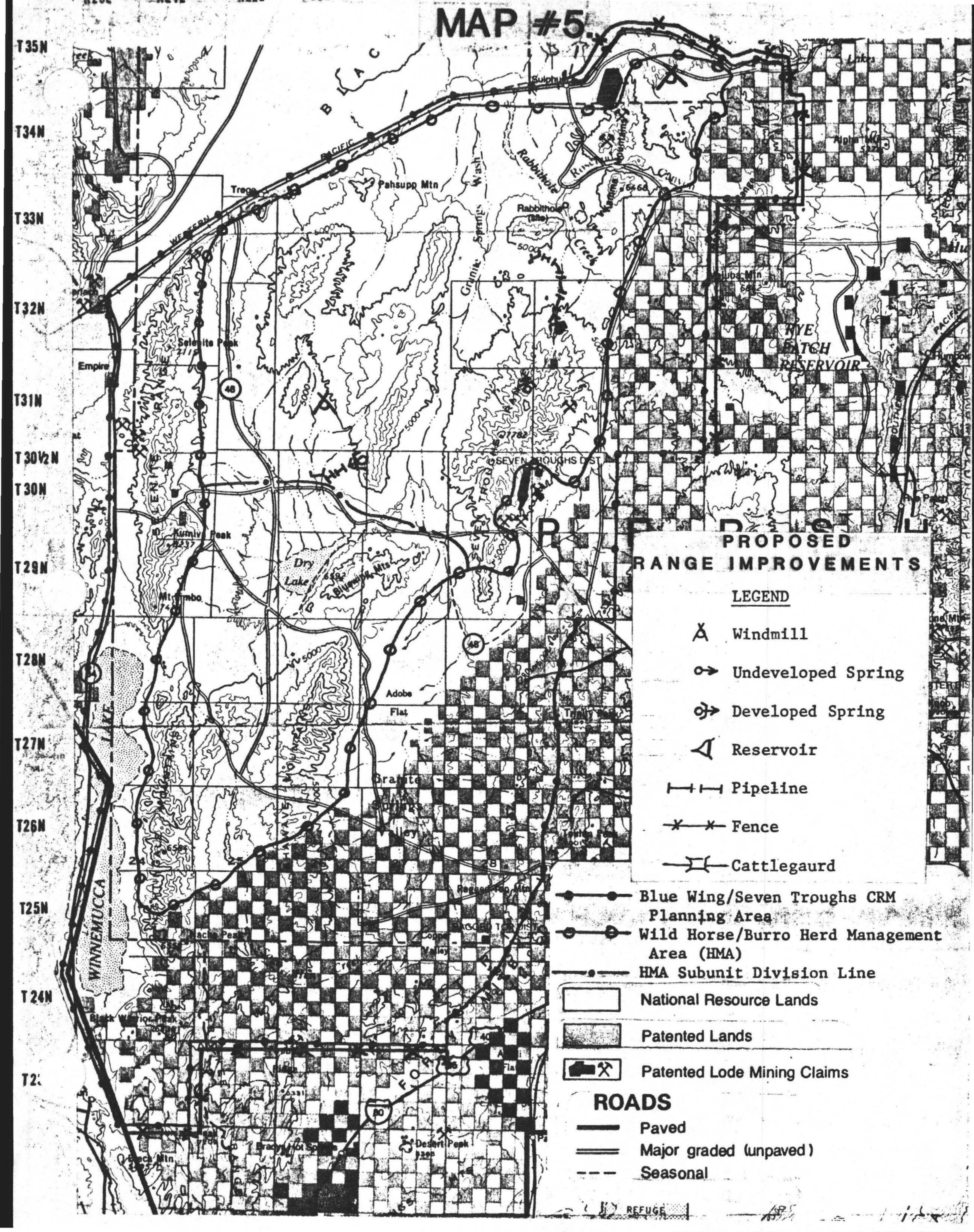
MAP #3.



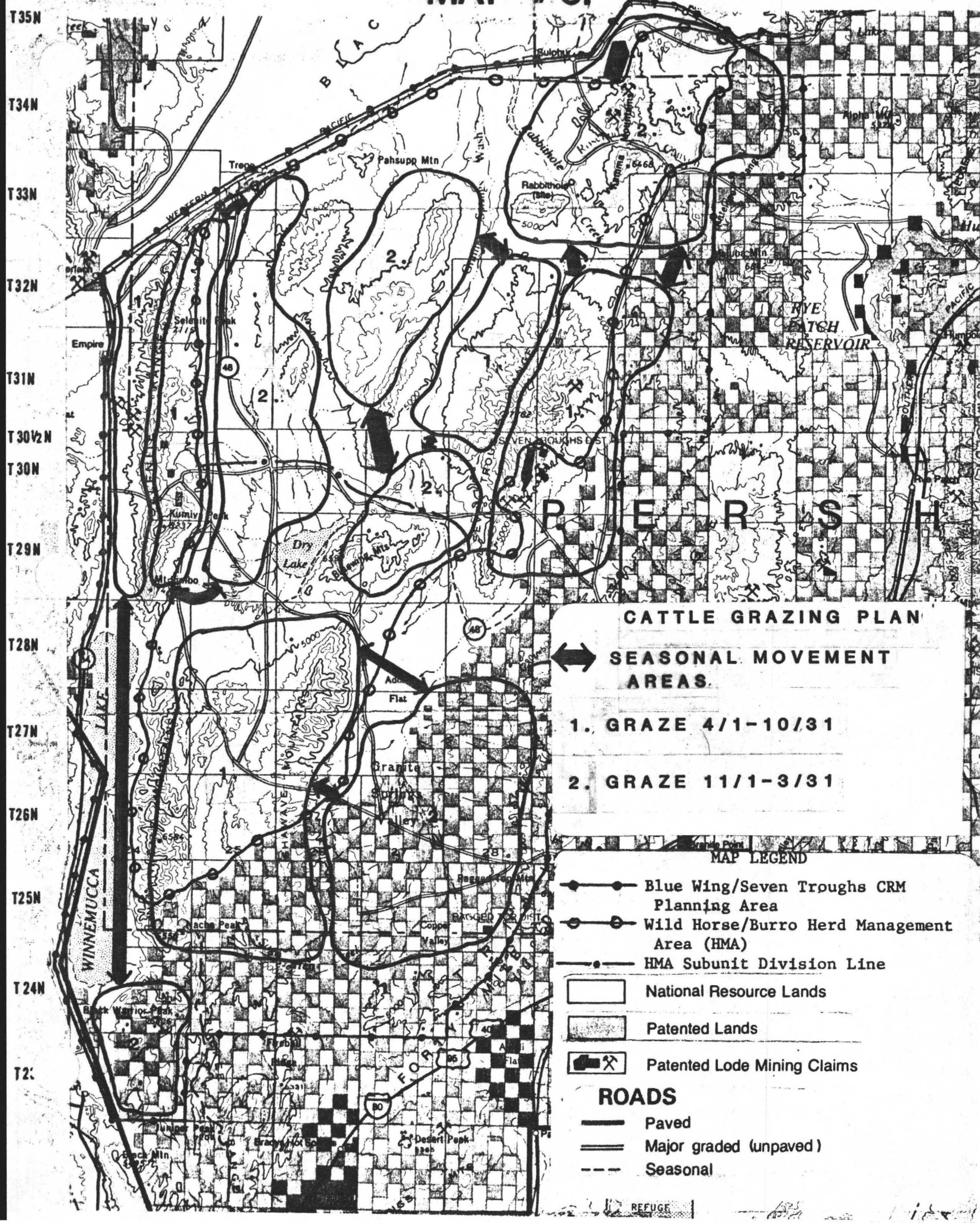
WINNEMUCCA DISTRICT

MAP #4.


EXISTING
RANGE IMPROVEMENTS
LEGEND
Windmill
Undeveloped Spring
Developed Spring
Reservoir
Pipeline
Fence
Cattlegaurd
Blue Wing/Seven Troughs CRM Planning Area
Wild Horse/Burro Herd Management Area (HMA)
HMA Subunit Division Line
National Resource Lands
Patented Lands
Patented Lode Mining Claims
ROADS
Paved
Major graded (unpaved)
Seasonal
T35N
T34N
T33N
T32N
T31N
T30½N
T30N
T29N
T28N
T27N
T26N
T25N
T24N
Sulphur
Pahsupp Mtn
Trego
Rabbithole
Selenite Peak
Empire
Kumiva Peak
Dry Lake
Blue Wing Mts
Adobe Flat
Granite Springs Valley
SEVEN TROUGHS DIST
RYE PATCH RESERVOIR
WINNEMUCCA LAKE
Nacha Peak
Copper Valley
Desert Peak
REFUGE

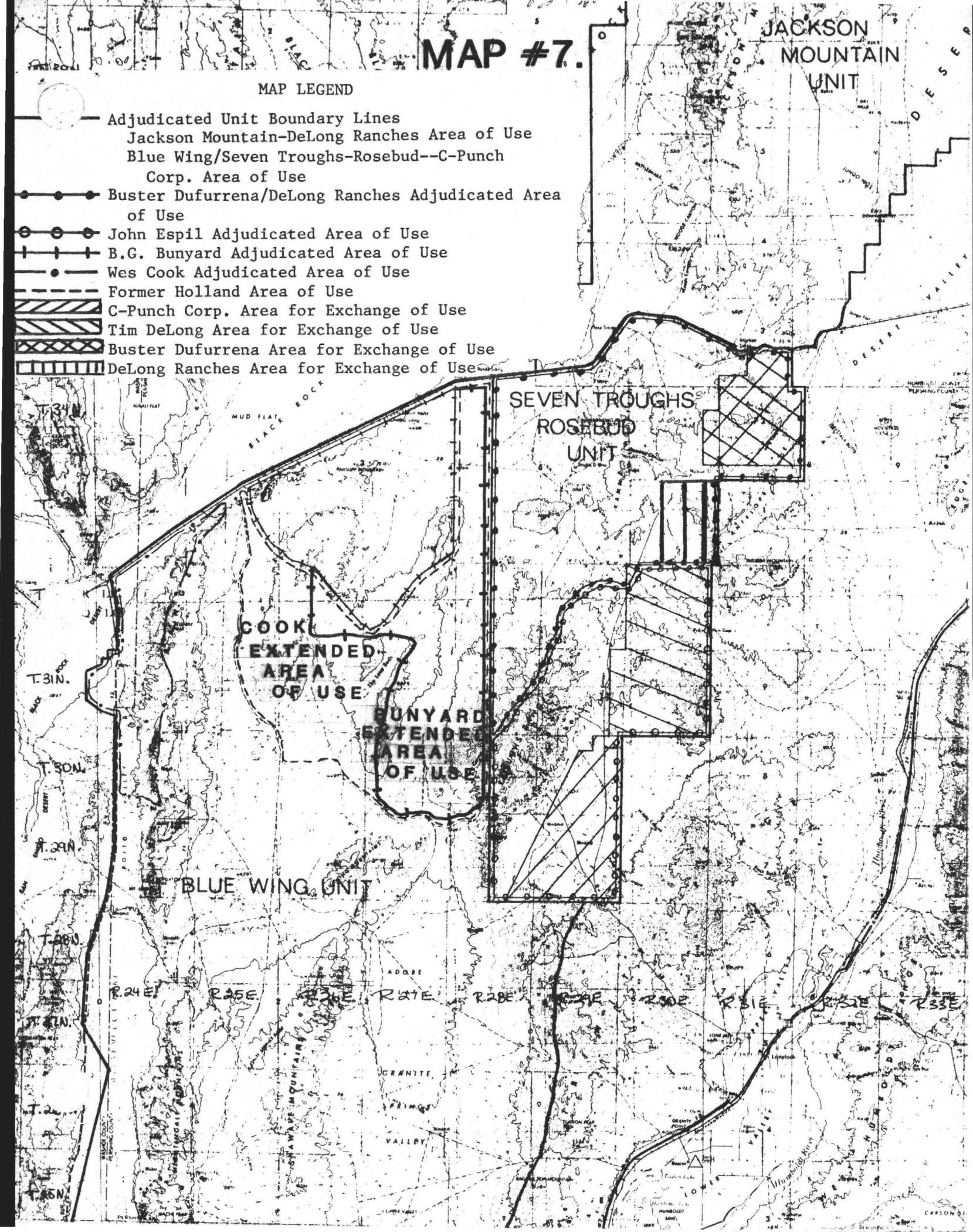

MAP #5
PROPOSED RANGE IMPROVEMENTS
LEGEND
Windmill
Undeveloped Spring
Developed Spring
Reservoir
Pipeline
Fence
Cattlegaurd
Blue Wing/Seven Troughs CRM Planning Area
Wild Horse/Burro Herd Management Area (HMA)
HMA Subunit Division Line
National Resource Lands
Patented Lands
Patented Lode Mining Claims
ROADS
Paved
Major graded (unpaved)
Seasonal
T35N
T34N
T33N
T32N
T31N
T 30½ N
T 30N
T29N
T28N
T27N
T26N
T25N
T24N
Pahsupp Mtn
Trego
Rabbithole
Selenite Peak
Empire
Kumiva Peak
Dry Lake
Adobe Flat
SEVEN TROUGHS DIST
RYE PATCH RESERVOIR
WINNEMUCCA LAKE
Desert Peak
REFUGE

MAP #6.



CATTLE GRAZING PLAN
SEASONAL MOVEMENT AREAS.
1. GRAZE 4/1-10/31
2. GRAZE 11/1-3/31
MAP LEGEND
Blue Wing/Seven Troughs CRM Planning Area
Wild Horse/Burro Herd Management Area (HMA)
HMA Subunit Division Line
National Resource Lands
Patented Lands
Patented Lode Mining Claims
ROADS
Paved
Major graded (unpaved)
Seasonal
T35N
T34N
T33N
T32N
T31N
T30½N
T30N
T29N
T28N
T27N
T26N
T25N
T24N
PERSHING
WINNEMUCCA LAKE
RYE PATCH RESERVOIR
Pahsupp Mtn
Rabbithole (site)
Sulphur
Trego
Empire
Selenite Peak
Kumiva Peak
Dry Lake
Granite Springs Valley
Adobe Flat
Nache Peak
Copper Valley
Black Warrior Peak
Juniper Peak
Desert Peak
SEVEN TROUGHS DIST
RAGGED TOP DIST
REFUGE

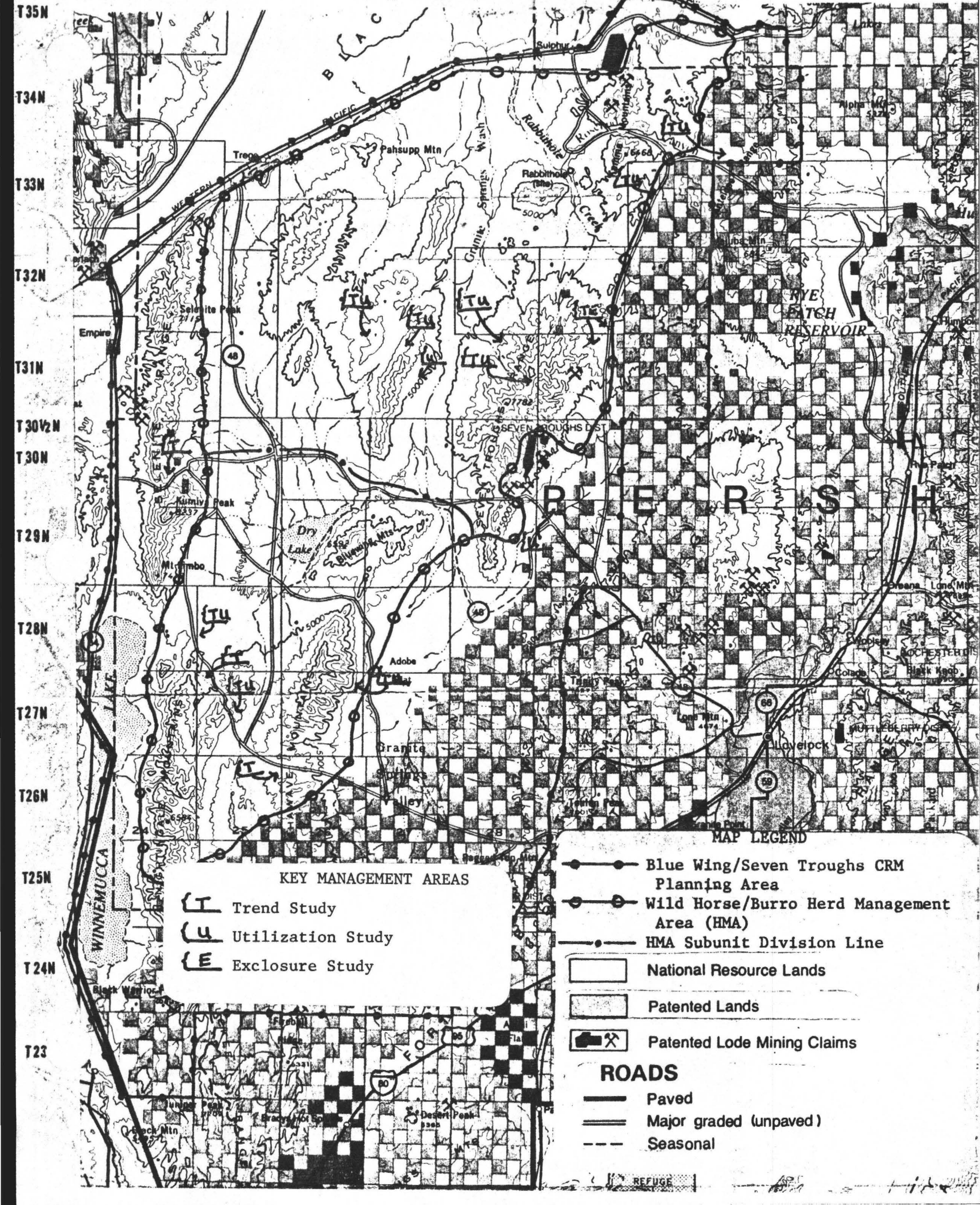
MAP #7.



MAP LEGEND

- Adjudicated Unit Boundary Lines
  - Jackson Mountain-DeLong Ranches Area of Use
  - Blue Wing/Seven Troughs-Rosebud--C-Punch Corp. Area of Use
- Buster Dufurrena/DeLong Ranches Adjudicated Area of Use
- John Espil Adjudicated Area of Use
- B.G. Bunyard Adjudicated Area of Use
- Wes Cook Adjudicated Area of Use
- Former Holland Area of Use
- C-Punch Corp. Area for Exchange of Use
- Tim DeLong Area for Exchange of Use
- Buster Dufurrena Area for Exchange of Use
- DeLong Ranches Area for Exchange of Use

MAP #8.


KEY MANAGEMENT AREAS
T Trend Study
U Utilization Study
E Exclosure Study
MAP LEGEND
Blue Wing/Seven Troughs CRM Planning Area
Wild Horse/Burro Herd Management Area (HMA)
HMA Subunit Division Line
National Resource Lands
Patented Lands
Patented Lode Mining Claims
ROADS
Paved
Major graded (unpaved)
Seasonal
T35N
T34N
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T32N
T31N
T30½N
T30N
T29N
T28N
T27N
T26N
T25N
T24N
T23
Sulphur
Trego
Pahsupp Mtn
Rabbithole
Gerlach
Empire
Selenite Peak
Kumiva Peak
Mt Limbo
Dry Lake
Seven Troughs Dist
Rye Patch Reservoir
Adobe Flat
Granite Springs Valley
Lovelock
Winnemucca Lake
Desert Peak
REFUGE

Appendix 3. Synopsis of Census Data

Herd Use Area	Fall 1974 Horses A*	Fall 1974 Horses Foals(%)	Fall 1974 Burros A*	Fall 1974 Burros Foals(%)	Spring 1977 Horses A*	Spring 1977 Horses Foals(%)	Spring 1977 Burros A*	Spring 1977 Burros Foals(%)	Summer 1980 Horses A*	Summer 1980 Horses Foals(%)	Summer 1980 Burros A*	Summer 1980 Burros Foals(%)	Summer 1980 Mules A*	Summer 1980 Mules Foals(%)	Fall 1984 Horses A*	Fall 1984 Horses Foals(%)	Fall 1984 Burros A*	Fall 1984 Burros Foals(%)	Fall 1984 Mules A*	Fall 1984 Mules Foals(%)	Spring 1985 Horses A*	Spring 1985 Horses Foals(%)	Spring 1985 Burros A*	Spring 1985 Burros Foals(%)	Spring 1985 Mules A*	Spring 1985 Mules Foals(%)
telope Range	55	16(23)			171	25(13)			260	68(21)	3	2(40)	10	2(17)	343	103(23)			6		402	100(20)	2	1(33)		
Total	71				196				328		5		12		446				6		502		3			
mma Mountains	10	1(9)			42	9(18)	1		25	6(19)					78	27(26)			2		45	7(13.5)	1		1	
Total	11				51		1		31						105				2		52		1		1	
va Beds	396	119(23)	14	6(30)	553	79(13)	19		510	103(17)	36	8(18)			819	263(24)	90	24(21)			884	173(16)	36	4(10)		
Total	515		20		632		19		613		44				1082		114				1057		40			
ven Troughs	18	17(49)	9		150	29(16)	30	2(6)	549	115(17)	65	20(24)	1		580	183(24)	186	61(25)			262	51(16)	134	15(10)		
Total	35		9		179		32		664		85		1		763		247				313		149			
lenite Range	4				4		6		7	3(30)	1				38	13(26)	11	2(15)			20	4(17)	1			
Total	4				4		6		10		1				51		13				24		1			
ue Wing Mtns	122	38(24)			39	4(9)	24	2(8)	61	11(15)	32	7(18)			69	21(23)	57	20(26)			40	12(23)	40	9(18)		
Total	160				43		26		72		39				90		77				52		49			
awave Mtns	153	41(21)			290	72(20)			312	60(16)					306	68(18)	8	1(11)			144	36(20)				
Total	194				362				372						374		9				180					
ghtingale Mtns	54	18(25)			172	39(18)			291	41(12)	8	1(11)			324	96(23)					137	37(21)				
Total	72				221				332		9				420						174					
uckee Range	52	12(19)			46	6(12)			53	8(13)					47	15(24)					72	10(12)				
Total	64				52				61						62						82					
HMA Total	1126		29		1730		84		2483		183		13		3393		460		8		2436		243		1	

dults

Appendix 4. Age Structure

Nightingale/Shawave Subunit-Age Structure

1981 Capture Data (Horses)

Year Class	Male	Female	Total	% of Total Population
0	96	92	188	34.0
1	17	30	47	8.5
2	25	30	55	10.0
3	26	29	55	10.0
4	2	3	5	0.9
5	3	7	10	1.8
6	6	15	21	3.8
7	24	29	53	9.6
8	13	29	42	7.6
9	4	20	24	4.3
10	1	11	12	2.2
11	0	4	4	0.7
12	0	9	9	1.6
13+	1	3	4	0.7
Not* Aged	19	5	24	4.3
Total	237	316	553	100.0
%	42.9	57.1	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 5. Age Structure

Lava Beds/Seven Troughs Subunit-Age Structure

1981 Capture Data (Horses)

Year Class	Male	Female	Total	% of Total Population
0	91	89	180	30.4
1	39	51	90	15.2
2	18	21	39	6.6
3	9	27	36	6.1
4	15	34	49	8.3
5	9	40	49	8.3
6	8	26	34	5.7
7	8	25	33	5.6
8	6	10	16	2.7
9	0	0	0	0.0
10	1	5	6	1.0
11	0	0	0	0.0
12	1	1	2	0.3
13+	10	20	30	5.1
Not* Aged	18	10	28	4.7
Total	233	359	592	100.0
%	39	61	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Burros

Year Class	Male	Female	Total	% of Total Population
0	1	1	2	10.5
1	2	1	3	15.8
2	0	0	0	0.0
3	1	1	2	10.5
4	3	1	4	21.1
5	1	2	3	15.8
6	3	1	4	21.1
7	0	0	0	0.0
8	1	0	1	5.2
Total	12	7	19	100.0
%	63	37	100	100.0

Appendix 6. Color Types

Nightingale/Shawave Subunit - Color Types

1981 Capture Data (Horses)

Color Types	Male	Female	Total	% of Total Population
Bay	75	103	178	32.2
Gray	9	10	19	3.4
Pinto	0	4	4	0.7
Red Roan	23	17	40	7.2
Strawberry Roan	13	16	29	5.2
Brown	25	34	59	10.7
Sorrel	27	42	69	12.5
Black	6	14	20	3.6
Albino	1	1	2	0.4
Sevina	2	4	6	1.1
Buckskin	9	18	27	4.9
Quemella Roan	3	5	8	1.5
Grulla	6	10	16	2.9
Red Dun	4	7	11	2.0
Palomino	0	1	1	0.2
Blue Roan	3	0	3	0.5
Chestnut	1	2	3	0.5
Dun	0	1	1	0.2
Not Classified*	30	27	57	10.3
Total	237	316	553	100.0
%	42.9	57.1	100	100 0

*These animals died of natural causes or were destroyed because of injuries before they were classified.

Appendix 7. Color Types

Lava Beds/Seven Troughs Subunit - Color Types

1981 Capture Data-Horses

Color Types	Male	Female	Total	% of Total Population
Bay	36	65	101	17.0
Gray	1	5	6	1.0
Pinto	11	12	23	3.9
Red Roan	2	1	3	0.5
Strawberry Roan	2	2	4	0.7
Brown	27	40	67	11.3
Sorrel	41	68	109	18.4
Black	27	44	71	12.0
Albino	4	1	5	0.8
Sevina	3	1	4	0.7
Buckskin	24	29	53	9.0
Quemella Roan	1	3	4	0.7
Grulla	18	37	55	9.3
Red Dun	6	12	18	3.0
Blue Roan	3	10	13	2.2
Chestnut	5	7	12	2.0
Dun	5	6	11	1.9
Piebald	0	1	1	0.2
Not Classified*	17	15	32	5.4
Total	233	359	592	100.0
%	39	61	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were classified.

Appendix 8. Color Types

Lava Beds/Seven Troughs Subunit - Color Types

1981 Capture Data - Burros

Color Types	Male	Female	Total	% of Total Population
Brown	1	0	1	5.3
Gray	11	7	18	94.7
Total	12	7	19	100.0
%	63	37	100	100.0

Appendix 9. Age Structure

Blue Wing/Seven Troughs Herd Management Area

January - February 1985 Capture Data (Horses)

Year Class	Male	Female	Total	% of Total Population
0	14	9	23	1.1
1	250	251	501	23.0
2	160	188	348	16.0
3	81	88	169	7.8
4	71	102	173	7.9
5	49	71	120	5.5
6	93	112	205	9.4
7	69	80	149	6.8
8	49	49	98	4.5
9	28	32	60	2.8
10	27	20	47	2.2
11	21	13	34	1.6
12	18	10	28	1.3
13+	54	28	82	3.8
Not Aged*	45	98	143	6.6
Total	1029	1151	2180	100.0
%	47.2	52.8	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 10. Age Structure

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Horses)

Year Class	Male	Female	Total	% of Total Population
0	42	33	75	16.0
1	41	35	76	16.2
2	33	34	67	14.3
3	12	26	38	8.1
4	9	14	23	4.9
5	8	23	31	6.6
6	16	15	31	6.6
7	16	15	31	6.6
8	7	11	18	3.8
9	5	2	7	1.5
10	4	2	6	1.3
11				
12	5	4	9	1.9
13+	26	12	38	8.1
Not Aged*	7	13	20	4.3
Total	231	239	470	100.0
%	49.1	50.9	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 11. Age Structure

Blue Wing/Seven Troughs Herd Management Area

January-February 1985 Capture Data (Burros)

Year Class	Male	Female	Total	% of Total Population
0	23	16	39	15.9
1	5	10	15	6.1
2	27	24	51	20.7
3	6	11	17	6.9
4	8	13	21	8.5
5	8	19	27	11.0
6	21	16	37	15.0
7	7	7	14	5.7
8	2	2	4	1.6
9	3		3	1.2
10	1	1	2	.8
11	2		2	.8
12	3	2	5	2.0
13+	2	2	4	1.6
Not Aged*	3	2	5	2.0
Total	121	125	246	100.0
%	49.2	50.8	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 12. Age Structure

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Burros)

Year Class	Male	Female	Total	% of Total Population
0	5	2	7	11.1
1	3	2	5	7.9
2	11	7	18	28.6
3	1	1	2	3.2
4	2	2	4	6.3
5	6	6	12	19.0
6	2	1	3	4.8
7				
8				
9	1		1	1.6
10	1		1	1.6
11				
12		2	2	3.2
13+	1	1	2	3.2
Not Aged*	1	5	6	9.5
Total	34	29	63	100.0
%	54	46	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 13. Age Structure

Blue Wing/Seven Troughs Herd Management Area

January-February 1985 Capture Data (Mules)

Year Class	Male	Female	Total	% of Total Population
0				
1				
2				
3				
4				
5	3	6	9	90.0
6				
7				
8				
9				
10				
11				
12				
13+	1		1	10.0
Not Aged*				
Total	4	6	10	100.0
%	40	60	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 14. Age Structure

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Mules)

Year Class	Male	Female	Total	% of Total Population
0				
1				
2				
3				
4	1		1	100.00
5				
6				
7				
8				
9				
10				
11				
12				
13+				
Not Aged*				
Total	1		1	100.0
%	100		100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 15. Color Types

Blue Wing/Seven Troughs Herd Management Area

January-February 1985 Capture Data (Horses)

Color Types	Male	Female	Total	% of Total Population
Bay	194	243	437	18.5
Gray	47	47	94	4.0
Pinto	68	85	153	6.5
Red Roan	30	23	53	2.2
Strawberry Roan	28	28	56	2.4
Brown	188	215	403	17.1
Sorrel	220	245	465	19.7
Black	95	83	178	7.5
Albino	4	3	7	.3
Sevina	10	11	21	.9
Buckskin	79	81	160	6.8
Quemella Roan	9	2	11	.5
Palomino	3	0	3	.1
Grulla	49	39	88	3.7
White	6	1	7	.3
Red Dun	14	33	47	2.0
Chestnut	7	1	8	.3
Dun	3	0	3	.1
Piebald				
Blue Roan	11	13	24	1.0
Not Classified*	45	98	143	6.1
Total**	1,110	1,251	2,361	100.0
%	47.0	53.0	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

**The total include 181 animals born at PVC.

Appendix 16. Color Types

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Horses)

Color Types	Male	Female	Total	% of Total Population
Bay	70	80	150	31.9
Gray	1	2	3	.6
Pinto	5	12	17	3.6
Red Roan	3	1	4	.9
Strawberry Roan	5	1	6	1.3
Brown	30	31	61	13.0
Sorrel	74	66	140	29.8
Black	21	21	42	8.9
Albino				
Sevina		2	2	.4
Buckskin	4	3	7	1.5
Quemella Roan				
Palomino	1	1	2	.4
Grulla	2	0	2	.4
White				
Red Dun	2	1	3	.6
Chestnut	6	5	11	2.4
Dun				
Piebald				
Blue Roan				
Not Classified*	7	13	20	4.3
Total	231	239	470	100.0
%	49.1	50.9	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 17. Color Types

Blue Wing/Seven Troughs Herd Management Area

January-February 1985 Capture Data (Burros)

Color Types	Male	Female	Total	% of Total Population
Bay				
Gray	79	83	162	65.6
Pinto	13	14	27	10.9
Red Roan				
Strawberry Roan				
Brown	19	14	33	13.4
Sorrel				
Black				
Albino				
Sevina				
Buckskin				
Quemella Roan				
Palomino				
Grulla	7	13	20	8.1
White				
Red Dun				
Chestnut				
Dun				
Piebald				
Blue Roan				
Not Classified*	3	2	5	2.0
Total**	121	126	247	100.0
%	49.0	51.0	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

**The total includes 1 jenny born at PVC.

Appendix 18. Color Types

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Burros)

Color Types	Male	Female	Total	% of Total Population
Bay				
Gray	20	13	33	52.4
Pinto	4	9	13	20.6
Red Roan				
Strawberry Roan				
Brown	5	2	7	11.1
Sorrel				
Black				
Albino				
Sevina				
Buckskin				
Quemella Roan				
Palomino				
Grulla	4	0	4	6.4
White				
Red Dun				
Chestnut				
Dun				
Piebald				
Blue Roan				
Not Classified*	1	5	6	9.5
Total	34	29	63	100.0
%	54	46	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 19. Color Types

Blue Wing/Seven Troughs Herd Management Area

January-February 1985 Capture Data (Mules)

Color Types	Male	Female	Total	% of Total Population
Bay				
Gray				
Pinto				
Red Roan				
Strawberry Roan				
Brown	1	1	2	20.0
Sorrel				
Black				
Albino				
Sevina				
Buckskin	3	5	8	80.0
Quemella Roan				
Palomino				
Grulla				
White				
Red Dun				
Chestnut				
Dun				
Piebald				
Blue Roan				
Not Classified*				
Total	4	6	10	100.0
%	40	60	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 20. Color Types

Lava Beds/Seven Troughs Subunit

1985 (July) Capture Data (Mules)

Color Types	Male	Female	Total	% of Total Population
Bay	1		1	100
Gray				
Pinto				
Red Roan				
Strawberry Roan				
Brown				
Sorrel				
Black				
Albino				
Sevina				
Buckskin				
Quemella Roan				
Palomino				
Grulla				
White				
Red Dun				
Chestnut				
Dun				
Piebald				
Blue Roan				
Not Classified*				
Total	1		1	100.0
%	100			100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 21. Age Structure (Horses)

Summary of Gatherings through

July 1985 for Blue Wing/Seven Troughs HMA

Year Class	Male	Female	Total	% of Total Population
0	243	233	466	12.3
1	347	367	714	18.8
2	236	273	509	13.4
3	128	170	298	7.8
4	97	153	250	6.6
5	69	141	210	5.5
6	123	168	291	7.7
7	117	149	266	7.0
8	75	99	174	4.6
9	37	54	91	2.4
10	33	38	71	1.9
11	21	17	38	1.0
12	24	24	48	1.2
13+	91	63	154	4.1
Not Aged*	89	126	215	5.7
Total	1730	2065	3795	100.0
%	45.6	54.4	100	100.0

Appendix 22. Age Structure (Burros)

Summary of Gatherings through

July 1985 for Blue Wing/Seven Troughs HMA

Year Class	Male	Female	Total	% of Total Population
0	29	19	48	14.6
1	10	13	23	7.0
2	38	31	69	21.1
3	8	13	21	6.4
4	13	16	29	8.9
5	15	27	42	12.8
6	26	18	44	13.4
7	7	7	14	4.3
8	3	2	5	1.5
9	4		4	1.2
10	2	1	3	.9
11	2		2	.6
12	3	4	7	2.1
13+	3	3	6	1.8
Not Aged*	4	7	11	3.4
Total	167	161	328	100.0
%	50.9	49.1	100	100.0

Appendix 23. Age Structure (Mules)

Summary of Gatherings through

July 1985 for Blue Wing/Seven Troughs HMA

Year Class	Male	Female	Total	% of Total Population
0				
1				
2				
3				
4	1		1	9.1
5	3	6	9	81.8
6				
7				
8				
9				
10				
11				
12				
13+	1		1	9.1
Not Aged*				
Total	5	6	11	100.0
%	45.5	54.5	100	100.0

Appendix 24. Color Types (Horses)

Summary of Gatherings through

July 1985 for Blue Wing/Seven Troughs HMA

Color Types	Male	Female	Total	% of Total Population
Bay	375	491	866	21.8
Gray	58	64	122	3.1
Pinto	84	113	197	5.0
Red Roan	58	42	100	2.5
Strawberry Roan	48	47	95	2.4
Brown	270	320	590	14.9
Sorrel	362	421	783	19.7
Black	149	162	311	7.8
Albino	9	5	14	.3
Sevina	15	18	33	.8
Buckskin	116	131	247	6.2
Quemella Roan	13	10	23	.6
Palomino	4	2	6	.2
Grulla	75	86	161	4.1
White	6	1	7	.2
Red Dun	26	53	79	2.0
Chestnut	19	15	34	.9
Dun	8	7	15	.4
Piebald		1	1	.0
Blue Roan	17	14	31	.8
Not Classified*	99	153	252	6.3
Total**	1811	2156	3967	100.0
%	45.7	54.3	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

**The total includes 181 animals born at PVC.

Appendix 25. Color Types (Burros)

Summary of Gatherings through

July 1985 for Blue Wing/Seven Troughs HMA

Color Types	Male	Female	Total	% of Total Population
Bay				
Gray	110	103	213	64.7
Pinto	17	23	40	12.2
Red Roan				
Strawberry Roan				
Brown	25	16	41	12.5
Sorrel				
Black				
Albino				
Sevina				
Buckskin				
Quemella Roan				
Palomino				
Grulla	11	13	24	7.3
White				
Red Dun				
Chestnut				
Dun				
Piebald				
Blue Roan				
Not Classified*	4	7	11	3.3
Total	167	162	329	100.0
%	50.8	49.2	100	100.0

*These animals died of natural causes or were destroyed because of injuries before they were processed.

Appendix 26.

Glossary of Terms

Active Preference - the allowable grazing use made by domestic livestock during the grazing year, and generally expressed in AUMs.

Adjudication (or range adjudication) - the allocation of grazing areas or use of allotments, season of grazing use, numbers and class of livestock and numbers of AUMs to qualified livestock operators (Nevada Report). The "Nevada Report" is a document prepared by Bureau personnel in 1974. The Nevada Report was about the effects of livestock grazing on wildlife, watershed, recreation, and other resource values in Nevada.

Adult Horse - Any wild horse two years or older (NSO - Instruction Memorandum NV 83-289).

Allotment - an area of land where one or more individuals graze their livestock. It generally consists of public lands but may include parcels of private or state owned lands. The number of livestock and period-of-use are stipulated for each allotment. An allotment may consist of several pastures or be only one pasture (Nevada Report).

Allotment Management Plan (AMP) - means a documented program which applies to livestock operations on the public lands, prepared in consultation and cooperation with the permittee(s), lessee(s) or other involved affected interests (43 CFR 4100.0-5).

Animal Unit Month (AUM) - means the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month (43 CFR 4100.0-5).

Appropriate Management Levels (AMLs) - the median number of wild horses or burros to be maintained by herd management area. (NSO Instruction Memorandum No. 83-289).

Carrying or grazing capacity - as used in this document, the words are synonymous. The phrase means the maximum stocking rate possible without inducing damage to vegetation or related resources.

Coordinated Resource Management Planning (CRMP) - public involvement program in which interest groups, other agencies, users and affected individuals develop multiple-use plans as part of the BLM's planning process (Winnemucca Preliminary Final Environmental Impact Statement).

Endangered Species - any species in danger of extinction throughout all or a significant portion of its range (WPFEIS).

Grazing system - systematic sequence of grazing use and nonuse of an area, which is designed to achieve established objective (Nevada Report).

Herd - means one or more stallions and their mares or jacks and their jennies (43 CFR 4700.0-5).

Herd Area - The geographic area identified as having been used by a herd as its yearlong habitat in 1971.

Herd Management Area Plan (HMAP) - an activity plan which addresses the management of wild horses or burros and the habitat on one or more herd management areas (NSO Instruction Memorandum No. 83-289).

Herd Management Area (HMA) - a herd area identified in an approved land use plan where wild horses or burros will be maintained and managed.

Management Framework Plan (MFP) - A land-use plan for the public lands which provides a set of goals, objectives and constraints for a specific planning area to guide the development of detailed plans for the management of each resource (WPFEIS).

MFP II - a BLM Area Manager's recommendation to the District Manager for the Management Framework Plan based on conflict resolution (WPFEIS).

MFP III - the District Manager's land use decision for management of the public lands and their resources (WPFEIS).

Management Plan - means a written program of action designed to protect, manage, and control wild free-roaming horses and burros and maintain a natural ecological balance on the public lands (43 CFR 4700.0-5).

Multiple Use - the management of public lands and their various resource values so that they are utilized in a combination that will best meet the present and future needs of the public (WPFEIS).

Public lands - means any lands administered by the Secretary of the Interior through the Bureau of Land Management (43 CFR 4700.0-5).

Range Survey (Vegetation Inventory) - a method for the measuring or inventory of vegetation to provide base data for use in management decisions and establishment of the grazing capacity.

Riparian - a biological zone influenced by the presence of water. Also used to refer to vegetation that grows along streams or around springs (WPFEIS).

Threatened species - any species likely to become endangered within the foreseeable future throughout all or a significant part of its range (WPFEIS).

Unit Resource Analysis (URA) - a description of the basic physical characteristics of an area.

Wilderness Study Area (WSA) - an area determined to have wilderness characteristics. Study areas will be subject to interdisciplinary analysis and public comment to determine wilderness suitability. Suitable areas will be recommended to the President and Congress for wilderness designation (WPFEIS).

Wild Free-Roaming Horse and Burro - All unbranded and unclaimed horses and burros that use public lands as all or part of their habitat or that have been removed from these lands by the authorized officer but have not lost their status under section 3 of the act. (NSO Instruction Memorandum No. 83-289).