United States Department of the Interior
Bureau of Land Management
Nevada State Office
850 Harvard Way, P.O. Box 12000
Reno, Nevada 89520-0006

In Reply Refer To:
1610 (NV-932.8)

FEB 1 1995

Dear Reader:

Enclosed for your review is the Wells Resource Management Plan Proposed Elk Amendment and Environmental Assessment. This amendment analyzes the impacts of several alternatives for managing elk in the Wells Resource Area, Elko District of the Bureau of Land Management. It has incorporated all relevant comments received during public review of the draft plan. This document contains a Finding of No Significant Impact. It is also available for a 30-day protest period.

This Proposed Resource Management Plan Amendment may be protested by any person who participated in the planning process and who has an interest which is or may be adversely affected by the approval of the plan amendment. A protest may raise only those issues which were submitted for the record during the planning process (see 43 Code of Federal Regulations 1610.5-2). Protests must be filed with the Director, Bureau of Land Management, Resource Planning Team (WO-480), P. O. Box 65775, Washington, D. C. 20035. All protests must be written and must be postmarked on or before March 24, 1995, and shall contain the following information:

1) The name, mailing address, telephone number, and interest of the person filing the protest.

2) A statement of the issue or issues being protested.

3) A statement of the part or parts of the document being protested.

4) A copy of all documents addressing the issue or issues previously submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the records.

5) A short, concise statement explaining precisely why the Bureau of Land Management's Nevada State Director's decision is wrong.

Upon resolution of any protests, an Approved Amendment and Decision Record will be issued. The Approved Amendment will be mailed to all individuals who participated in its development and to all other interested publics upon their request.

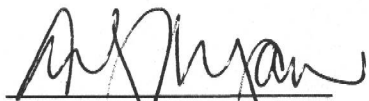
Sincerely,

Ann J. Morgan
State Director, Nevada

WELLS RESOURCE MANAGEMENT PLAN

PROPOSED
ELK AMENDMENT
and
ENVIRONMENTAL ASSESSMENT

Prepared by
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT



Ann J. Morgan
State Director, Nevada

February 1, 1995

The Wells Resource Management Plan Proposed Elk Amendment and Environmental Assessment outlines and analyzes the impact for the Proposed Plan and four alternatives for the management of elk in the eastern half of Elko County, Nevada by the Wells Resource Area, Elko District of the Bureau of Land Management.

For further information contact: Bill Baker, Wells Resource Area Manager, Bureau of Land Management, P.O. Box 831, 3900 East Idaho Street, Elko, Nevada 89803, or telephone (702) 753-0200.

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PROPOSED

ELK AMENDMENT

and
ENVIRONMENTAL ASSESSMENT

I. PURPOSE AND NEED

The purpose of this amendment is to establish elk habitat management areas, identify habitat requirements and specific management objectives and practices, establish target elk population management levels, develop factors for attainment and future adjustments in elk population management levels, and identify constraints on other resources within the Wells Resource Area (WRA).

Introduction:

Through a review of elk habitat management in the WRA, it was determined that elk numbers and habitat use areas are expanding from those identified in the Wells Resource Management Plan (RMP) Record of Decision (ROD) signed July 16, 1985. Elk habitat management objectives were identified for the Pilot and Jarbidge Mountain areas in the Wells RMP. At that time, Jarbidge was identified as a future management area. Elk were reestablished in the Jarbidge Mountains in January, 1990. The Jarbidge elk herd has remained within identified management areas on Elko BLM and adjacent Humboldt National Forest administered public lands. However, elk are recognized as highly adaptable creatures and during recent years have "pioneered" adjacent previously unoccupied habitats in the WRA from the Pilot Mountain Management Area, northwestern Utah and southern Idaho.

A policy statement issued by the State of Nevada Board of Wildlife Commissioners on December 6, 1988 identified Pilot Mountain as the only established elk population in the WRA. This policy statement recognized that elk were pioneering into adjacent habitats, however, no evidence existed to indicate these pioneering elk have established permanent populations outside the Pilot Mountain Management Area.

In 1990, the Nevada Division of Wildlife (NDOW) identified established elk populations on Pilot Mountain as well as the Crittenden/Goose Creek, Murdock Mountain, and 10-Mile/Black Mountain areas. The NDOW identified these populations outside Pilot Mountain as being established because they have maintained a breeding nucleus of animals for the past 4-8 years, are commonly sighted throughout the year and do not appear to migrate to Pilot Mountain or to other areas seasonally. Because of social behavior and high adaptability to available habitat types, elk have more recently been pioneering outside these management areas as well as immigrating into the resource area. Elk have been sighted in the Snake Range, East Humboldt Range, South Ruby Range, Spruce Mountain, Pequop Mountains, and Cherry Creek Range.

Because of the growing concern for expanding elk numbers in the resource area and their potential impact to attainment of existing multiple use objectives identified in the Wells RMP/ROD, the decision was made by the Nevada State Director to address this issue through amendment of the RMP.

Location:

The WRA is located in the northeast corner of Nevada and encompasses approximately the east half of Elko County (map 1). It contains 5.7 million acres of which 4.3 million are public lands administered by the Bureau of Land Management (BLM). The two existing elk management areas (Jarbidge and Pilot), presently occupied habitats, and habitat potentials within the WRA are shown on Map 2.

Planning Process:

The land use planning process, as mandated by the Federal Land Policy and Management Act (FLPMA) of 1976, is designed to enable BLM to address the issues and concerns of the public in outlining the management of the public lands within logical planning areas. This process involves nine basic planning steps. They are: 1) Identification of Issues; 2) Development of Planning Criteria; 3) Inventory and Data Collection; 4) Analysis of the Management Situation; 5) Formulation of Alternatives; 6) Estimation of Effects of Alternatives; 7) Selection of the Preferred Alternative; 8) Selection of the Proposed Plan; and 9) Monitoring and Evaluation.

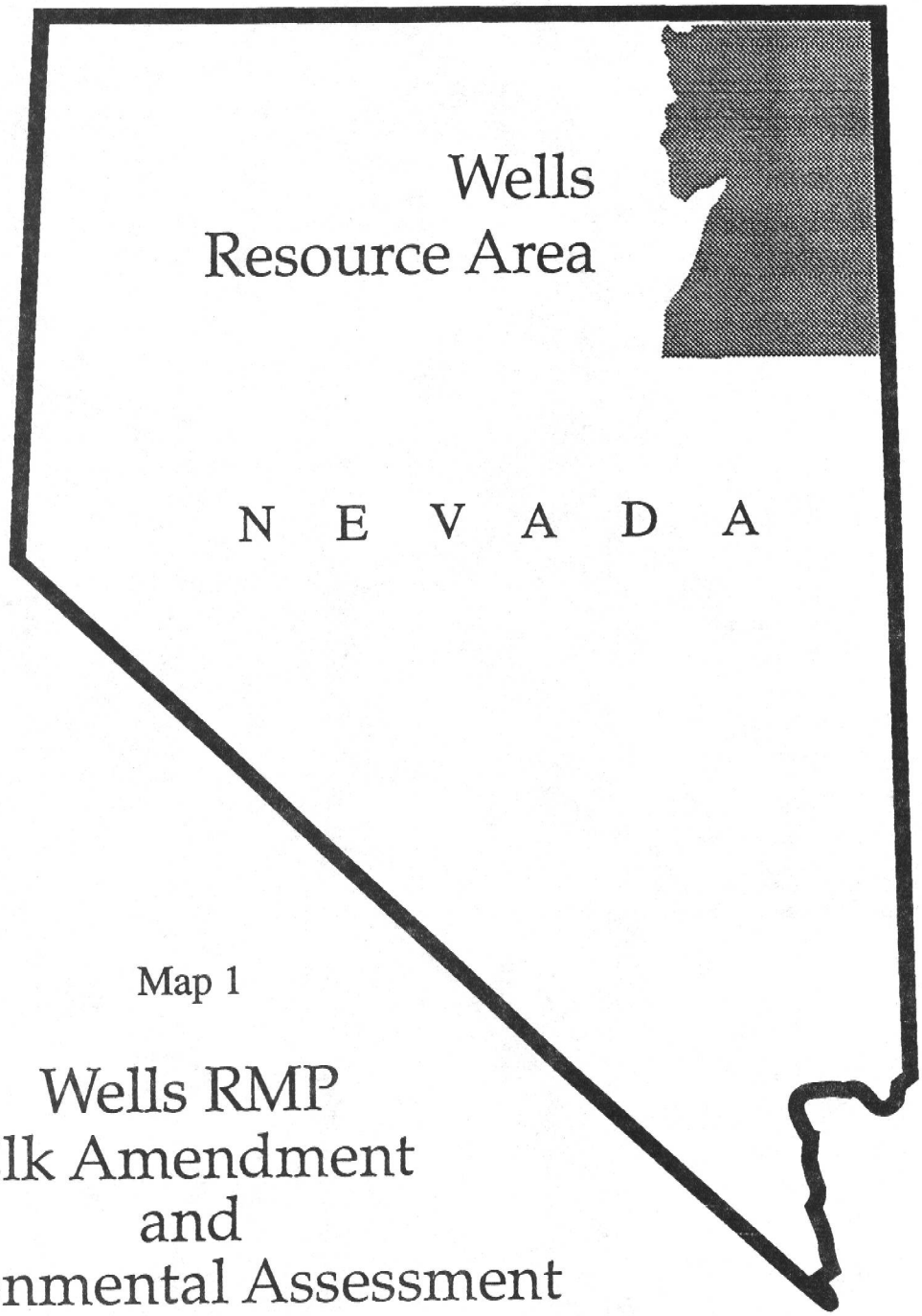
This draft amendment and environmental assessment addresses step 1 through 7 of the planning process. After public comments are received on the draft elk amendment and environmental assessment, step 8 will be initiated if a management alternative other than "No Action" is selected as the proposed plan from the management alternatives presented in Chapter II. The Proposed Plan, as well as a "Finding" on the significance of the action will be made available for public review during a 30-day protest period. Upon resolution of any protests a plan amendment will be approved and a decision record will be published and provided to all individuals that participated in the process. Finally, step 9, Monitoring and Evaluation of the plan amendment will be conducted, as are all aspects of resource management plans, to determine if further modifications are needed.

For additional information, refer to the Wells RMP/Environmental Impact Statement (EIS). These documents are available at the BLM Elko District Office.

Scoping:

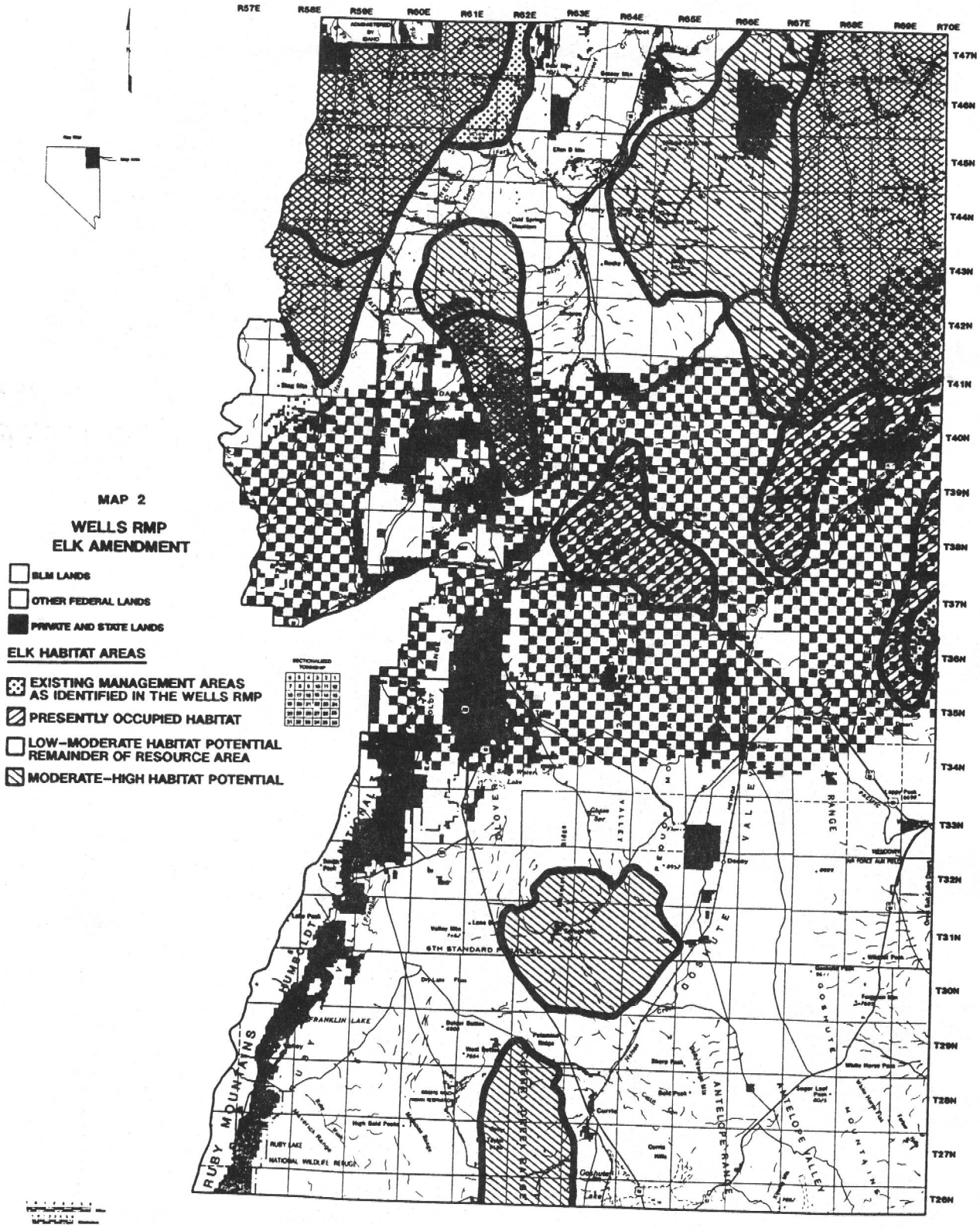
Elk management decisions in the WRA could have impacts on adjacent private and public lands within the tri-state region of Nevada-Utah-Idaho. Conversely, elk management decisions on public lands in adjoining states could have impacts on private and public lands within the WRA. Therefore, a regional approach was felt appropriate in addressing the issue of pioneering elk. A regional approach will also allow for continuity with adjacent public land management agencies in future land use planning efforts. Therefore, a task force consisting of resource management agency personnel, land owners and special interest groups within the tri-state area (Map 3) was formulated to provide for this continuity. The task force was utilized to formulate planning issues, identify the scope of environmental analysis, identify management alternatives to be considered, and provide baseline information.

With input from the task force, a scoping document was prepared which included the management issue, management objectives, preliminary planning criteria, and alternatives.



Map 1

Wells RMP
Elk Amendment
and
Environmental Assessment


MAP 2
WELLS RMP
ELK AMENDMENT
BLM LANDS
OTHER FEDERAL LANDS
PRIVATE AND STATE LANDS
ELK HABITAT AREAS
EXISTING MANAGEMENT AREAS AS IDENTIFIED IN THE WELLS RMP
PRESENTLY OCCUPIED HABITAT
LOW-MODERATE HABITAT POTENTIAL REMAINDER OF RESOURCE AREA
MODERATE-HIGH HABITAT POTENTIAL
R57E
R58E
R59E
R60E
R61E
R62E
R63E
R64E
R65E
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R67E
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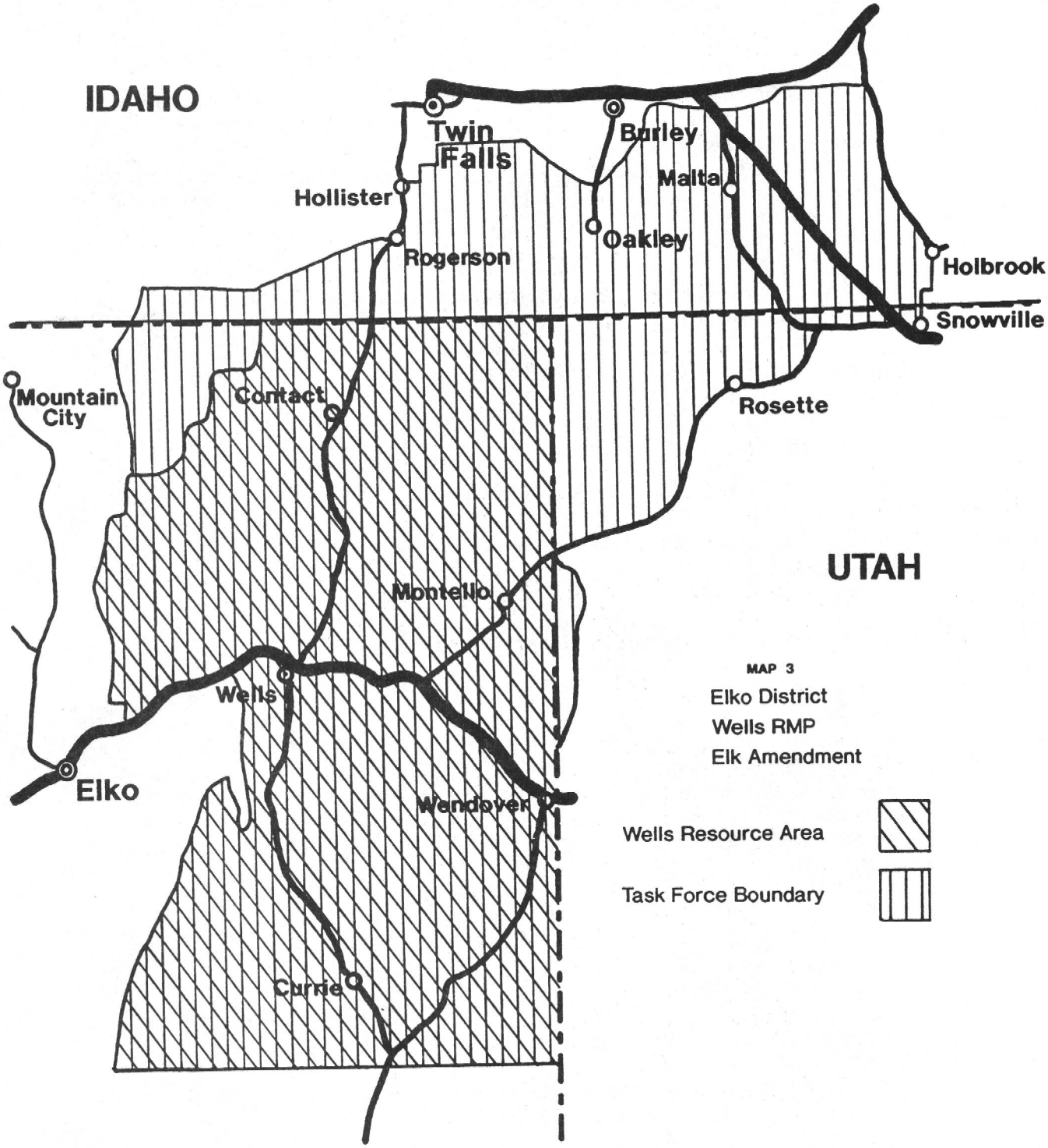
T28N
T27N
T26N
RUBY MOUNTAINS
HUMBOLDT
RUBY LAKE
NATIONAL WILDLIFE REFUGE
FRANKLIN LAKE
6TH STANDARD PARALLEL
ANTELOPE RANGE
ANTELOPE VALLEY
MOUNTAINS
RANGE


IDAHO
Twin Falls
Burley
Malta
Hollister
Oakley
Rogerson
Holbrook
Snowville
Mountain City
Contact
Rosette
UTAH
Montello
Wells
Elko
Wendover
Currie
NEVADA
MAP 3
Elko District
Wells RMP
Elk Amendment
Wells Resource Area
Task Force Boundary

During this amendment's 45-day scoping period, from May 14 to June 30, 1993, the public was asked by BLM to assist in further defining the planning issue, if necessary. In addition, the public was also asked to help in: 1) further defining the range of alternatives; 2) establishing planning criteria for the development of the amendment; and 3) identifying any other concerns or interests to be considered. Public scoping meetings were held in Twin Falls, Idaho (June 1, 1993) and Wells, Nevada (June 2, 1993).

Planning Issues:

Issues drive the resource management planning process and indicate specific concerns which the BLM and the public may have regarding the management of specific resources in a planning area. An issue is defined as an opportunity, conflict, or problem pertaining to the management of public lands and associated resources. Identification of issues orients the planning process so that the efforts of an interdisciplinary analysis and documentation are directed toward resolution of the issues.

Through use of the Task Force and through public scoping, it has been determined that this amendment need only address the issue of elk habitat management. In addressing this issue, the amendment will respond to the following planning questions:

1. Where will elk be managed on public lands in the WRA?

2. What habitat requirements and specific management objectives and practices are needed for elk?

3. What target elk population management level will habitat be managed to support?

4. How will elk population management levels be achieved or maintained?

5. How will adjustments be made in elk population management levels?

6. What constraints, if any, will be placed on other resource uses?

Planning Criteria:

Planning criteria are formulated to guide the development of a resource plan or an amendment to the resource plan. Planning criteria are derived from laws, Executive Orders, regulations, planning principles, BLM national and state guidance, consultation with interest groups and the general public, and available resource information of the area. Planning criteria help to: 1) set standards for data collection; 2) establish alternatives to be analyzed; and 3) select the preferred alternative.

The planning criteria for this RMP amendment are:

1. The Planning area is defined as the WRA.

2. The Wells RMP amendment will make elk habitat planning determinations for all public lands located within the planning area boundary.

3. Decisions proposed through this amendment will be in conformance with the decisions in the 1985 Wells RMP Record of Decision.

4. BLM Manual 1622, Supplemental Program Guidance for Renewable Resources, will be utilized to identify the determinations to be made.

5. Existing studies, the most current available inventories, current publications, and professional judgement will be used to determine potential impacts and to make sound management decisions.

6. Decisions about specific elk habitat improvement projects and augmentation or reestablishment efforts will be made in subsequent activity-level plans or through multiple use decisions designed to implement this amendment. The site-specific impacts for these types of future actions will be addressed on a case by case basis through required National Environmental Policy Act compliance documentation together with required documentation of impacts to critical elements of the human environment (i.e. Threatend, Endangered, or Candidate Species, Native American Religious Concerns, Cultural Resources, etc.).

7. Population targets will be set at a level consistent with other existing resource values and uses.

   The expansion of elk populations in the Wells Resource Area up to target population levels will not affect existing domestic livestock permits and licensed animal unit months (AUMs), wild horse appropriate management levels (AMLs), or wildlife use levels identified in the Wells RMP. If monitoring determines that an elk population less than the target level conflicts with existing grazing uses, and conflicts with other resource values and uses cannot be resolved through habitat management actions, the BLM will work with the NDOW to adjust elk numbers to a point that is compatible with existing uses and provides for good range and habitat conditions as supported by monitoring. Changes in livestock management will continue to occur to resolve livestock conflicts with multiple use objectives or to maintain and improve soil productivity and range and habitat conditions.

8. Future adjustments in target elk population levels will be made based on monitoring.

9. The time frame for long term management objectives will remain the same as outlined in the Wells RMP; i.e. 20 years from the date of the Record of Decision for the Wells RMP (2005).

10. A Memorandum of Understanding (MOU) between the NDOW and the BLM will be prepared which outlines the management determinations for the selected management alternative.

11. The following definitions will apply:

    Augmentation: The act of releasing native wildlife into habitat presently supporting that species to enlarge an existing population. Sometimes called supplemental transplants.

    Depredation: The act of causing damage to private land resources by certain game animals. As defined in the Nevada Administrative Code (NAC) 504.350 and as it used in NAC 504.355 to 504.440, "damage" means any change in the quality or quantity of private property or a privately maintained improvement which reduces its value or intended function and which is caused by elk or game animals not native to Nevada.

Endemic Species: A species that historically has occurred in a specific geographic area.

Established Population: A population of endemic or exotic wildlife species which through pioneering or through introduction or reestablishment efforts has successfully inhabited a specific geographic area creating a viable self-sustaining population.

Exotic Species: All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem in the United States.

Immigration: Wildlife species pioneering into the resource area from adjacent states, private, or public lands.

Introduction: The act of releasing exotic or non-native wildlife species into a natural ecosystem for the purpose of establishing a self-sustaining population

Native Species: All species of plants and animals naturally occurring, either presently or historically, in any ecosystem of the United States.

Occupied Habitat: Wildlife species observed utilizing available habitat at least on a seasonal basis where particular observed population densities may or may not constitute an established population, i.e. a viable self-sustaining population.

Pioneering: The act of wildlife species colonizing new habitat voluntarily, whether planned or not by the appropriate resource managers.

Reestablishment: The act of releasing native wildlife into habitat formerly occupied by that species for the purpose establishing a self-sustaining population in the wild state.

Reintroduction: The act of releasing exotic or non-native wildlife species into a natural ecosystem for the purpose of establishing a self-sustaining population where a previous introduction was unsuccessful.

Release: The act of liberating any wildlife species for the purpose or intent of creating self-sustaining or harvestable populations.

Suspended Non-use: The temporary withholding from active use, through a decision issued by the authorized officer or by agreement, of part or all of the permitted use in a grazing permit or lease.

Target Population Level: That population level of elk over six months of age: 1) determined by the land management agency to be consistent with the objective to manage public land forage resources on a sustained yield basis, and 2) from which the land management agency will make recommendations to the NDOW for adjustments either up or down based on monitoring data, and 3) for which the NDOW is committed to manage for through harvest strategies so as not to exceed these levels until rangeland monitoring data and evaluation of multiple use objectives indicates adjustments either up or down are appropriate.

Transplant: The act of releasing native wildlife species into habitat not previously occupied by that species for the purpose or intent of creating self-sustaining populations.

12. Management objectives and determinations for elk outlined in the selected alternative for this plan amendment shall comply with the Interim Management Policy for Lands Under Wilderness Review. If, through future Acts of Congress, lands within the WRA are designated Wilderness, elk management objectives and determinations shall comply with appropriate wilderness management policy guidance.

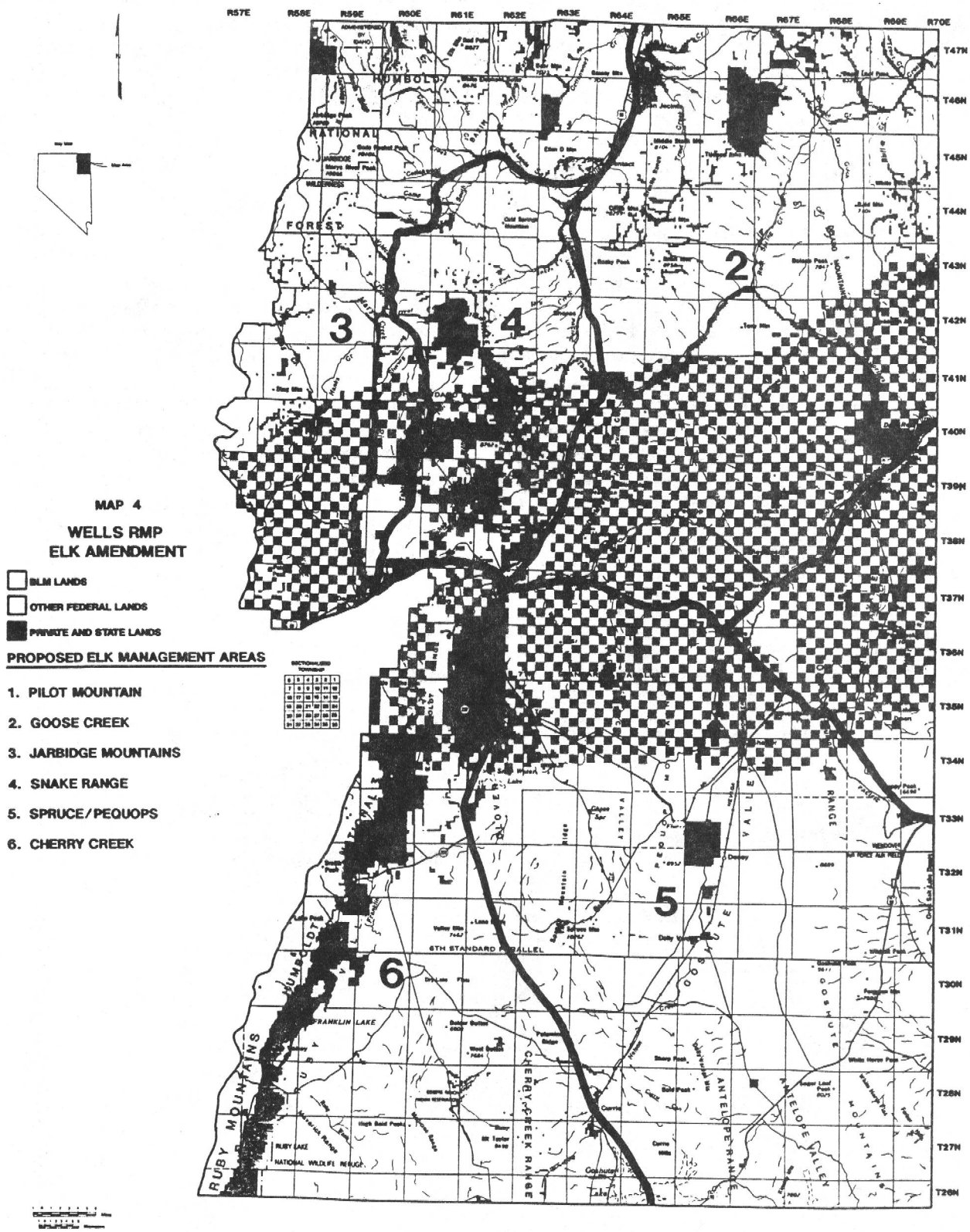
II. PROPOSED PLAN AND ALTERNATIVES ANALYZED

PROPOSED PLAN (2,200 ELK):

Under the Proposed Plan, elk management objectives would be identified for six management areas within the WRA (Map 4, Table 1) to support a target population level of 2,200 elk (plus or minus 10 percent) (Table 2). This target population level is based on an elk density level of 1.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

Table 1. Elk Management Area Descriptions.

MANAGEMENT AREA		GEOGRAPHICAL DESCRIPTION
NORTH I-80	Pilot Mountain	NDOW Management Area 079
	Goose Creek	NDOW Management Areas 076, 077, and 081
	Jarbidge Mountains	That portion of the WRA west of the South Fork of Salmon Falls Creek and the County Road from Sun Creek Ranch to Deeth
	Snake Range	That area bordered by US Highway 93, South Fork Salmon Falls Creek, County Road from Sun Creek Ranch to Deeth, I-80 from Deeth to Wells
SOUTH I-80	Spruce/ Pequops	That area bordered by US Highway 93, I-80 from Wells to Utah, the Utah State Line, the Elko-White Pine County line.
	Cherry Creeks	That area bordered US Highway 93, the Elko-White Pine County line, the Humboldt National Forest Boundary, I-80.


MAP 4
WELLS RMP
ELK AMENDMENT
BLM LANDS
OTHER FEDERAL LANDS
PRIVATE AND STATE LANDS
PROPOSED ELK MANAGEMENT AREAS
1. PILOT MOUNTAIN
2. GOOSE CREEK
3. JARBIDGE MOUNTAINS
4. SNAKE RANGE
5. SPRUCE/PEQUOPS
6. CHERRY CREEK
R57E
R58E
R59E
R60E
R61E
R62E
R63E
R64E
R65E
R66E
R67E
R68E
R69E
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T28N
T27N
T26N
HUMBOLDT
NATIONAL
FOREST
RUBY MOUNTAINS
RUBY LAKE
NATIONAL WILDLIFE REFUGE
FRANKLIN LAKE
CHERRY CREEK RANGE
ANTELOPE RANGE
ANTELOPE VALLEY
GOOSE CREEK
PEQUOP MOUNTAINS
SPRUCE MOUNTAIN
WENDOVER
AIR FORCE AUX FIELD
6TH STANDARD PARALLEL

Table 2. Existing and Target Elk Population Levels by Alternative.

Management Area	Existing Population	MANAGEMENT ALTERNATIVE TARGET POPULATION LEVELS [1]				
		No Action	Limited Growth	Proposed Plan	Moderate Density	High Density
Jarbidge	40-60[2]	110	110	220	370	515
Snake Rg.	0	0[5]	40	100	170	240
Goose Crk.	150-205	0[5]	400	1070	1780	2485
Spruce-Pequops	0	0[5]	120	340	560	790
Cherry Creeks	0	0[5]	80	220	370	520
Pilot	200-250[3]	290	250[4]	250	250	250
TOTAL	390-575	400	1000	2200	3500	4800

[1]Target population levels are plus or minus 10 percent.
[2]The Jarbidge Mountain herd totals approximately 130-150 of which approximately 40-60 are utilizing habitat in the WRA.
[3]The Pilot Mountain herd totals approximately 350-400, of which approximately 200-250 are utilizing habitat in the WRA.
[4]The target elk population within the Pilot Mountain Management Area remains constant with each management alternative, due to existing management agreements between the NDOW and the Utah Division of Wildlife.
[5]Although a target population level does not exist, elk would be allowed to pioneer suitable habitat outside the Jarbidge and Pilot Mountain Management Areas to the extent use by elk is not preventing attainment of existing multiple use objectives; i.e. there would be no management priority given to elk outside the Jarbidge and Pilot Mountain Management Areas.

Table 3. Acres of moderate-high potential elk habitat.

Management Area	Acres of Available Moderate to High Potential Habitat	% Public Land	Public Acres
Jarbidge	99,060	97	95,660
Snake Range	148,004	61	90,084
Goose Creek	767,580	80	612,285
Spruce-Pequops	149,584	99	147,959
Cherry Creeks	98,950	97	95,990
Pilot	66,094	49	32,654
Total	1,329,272		1,074,632

Table 4. Private Land Adjustment Criteria.

PERCENT PUBLIC LAND WITHIN MANAGEMENT AREA	ELK DENSITY ADJUSTMENT FACTOR
90-100%	1.0
80-90%	0.75
less than 80%	0.5

Objective:

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private and public land resources.

Management Determinations:

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 1) to provide forage to sustain a total resource area target elk population level of 1,980-2420 (Table 2).

2. The following habitat development projects would be completed: a) 20 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 45 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 2,000 acres of vegetation manipulation to enhance elk habitat.

3. Target elk population levels will be achieved as a result of natural expansion of existing populations through pioneering within the resource area, immigration into the resource area, and/or augmentation or reestablishment efforts. Augmentations and/or reestablishments will be subject to the following guidelines:

   a. Augmentations will not be allowed within any management area where existing elk populations are more than 50% of target levels identified in this proposed plan amendment or adjusted through the monitoring, allotment evaluation, and multiple use decision process.

   b. Proposed augmentations and/or reestablishments will be reviewed by the Multiple Resource Advisory Council responsible for advising the Bureau of Land Management on matters relating to public lands and resources under the administrative

jurisdiction of the WRA as governed by 43 CFR Part 1784.

c. Proposed augmentations and/or reestablishments will be authorized by an approved Release Agreement and Operations Plan signed by the BLM District Manager and NDOW Regional Supervisor as per current BLM Manual policy guidance.

d. All released animals will meet the requirements established by NDOW Wildlife Commission Policy.

e. All released animals will be ear tagged to facilitate monitoring of seasonal movements.

f. Augmentations and/or reestablishments will only be allowed within moderate to high potential elk habitat areas identified in this proposed plan amendment.

g. Release sites for augmentations and/or reestablishments will not be located on public lands designated as Wilderness Study Areas (WSAs) or Wilderness and will be located a minimum of ten miles from a WSA or Wilderness boundary.

4. Management objectives and monitoring efforts will be placed in the following priorities: 1) crucial; 2) seasonal; and 3) yearlong use areas.

5. Manage elk habitat in the Jarbidge Mountain Management Area consistent with the existing Jarbidge Elk Six Party Agreement.

6. Manage elk habitat in the Pilot Mountain Management Area consistent with the existing Nevada-Utah Interstate Agreement.

7. Adjustments in target elk population levels will be based on monitoring.

8. Seasonal use patterns will be monitored by the NDOW. Augmentation of existing populations with animals wearing radio-telemetry or similar monitoring devices will be allowed to facilitate monitoring efforts.

9. Population levels will be monitored by the NDOW to determine herd composition, trend, and approximate size.

10. The BLM will apply seasonal use pattern information and install vegetation monitoring studies to monitor the impacts of elk use to the vegetation resource. The type and intensity of studies will be determined once populations have become established and use patterns have been determined.

11. Elk population levels will be managed through population management strategies developed and implemented by the NDOW (Appendix E).

12. Structural and non-structural rangeland improvement projects to improve distribution and forage quality and quantity for both mule deer and livestock will have priority over elk management objectives.

13. Response to depredation complaints concerning elk damage to private land resources will be the responsibility of the NDOW as governed by appropriate Nevada Board of Wildlife Commissioners Policy and/or Nevada Revised Statutes directing such action be taken as deemed necessary, desirable, and practical to prevent land or property from being damaged or destroyed.

14. Supplemental feeding (winter feeding) of elk will not be allowed on public lands.

15. Combined use of key forage species by all grazing animals will not exceed existing allowable use levels as identified in the Nevada Rangeland Monitoring Handbook.

16. Elk use will be included within existing allowable use levels for key browse species by mule deer.

NO ACTION ALTERNATIVE:

The management of elk habitat would continue under the existing short and long-term management actions (management determinations) within those management units currently identified in the Approved Wells RMP (see Map 3).

Under the No Action alternative, current elk populations in the WRA would be allowed to expand as a result of naturally occurring populations being established through "pioneering" outside existing management areas on Pilot Mountain and the Jarbidge Mountains and/or through immigration into the resource area. Population expansion would be allowed to the extent that elk are not preventing attainment of existing multiple use objectives identified in the Wells RMP.

***Objectives** (As identified in the Approved Wells RMP):*

1. To conserve and/or enhance wildlife habitat to the maximum extent possible while eliminating all of the fencing hazards in crucial big game habitat, most of the fencing hazards in noncrucial big game habitat, and all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other resource uses.

2. Attempt to reach reasonable numbers of elk as determined in conjunction with the NDOW by maintaining and/or improving habitat conditions (Table 5).

3. Attempt to meet 1,952 AUMs demand for elk (Table 5).

4. Management objectives and monitoring efforts will focus on crucial/seasonal/yearlong use areas by their respective seasons of use.

5. Reasonable numbers would be sought through adherence to objectives listed above and reintroductions of elk into suitable habitat. Habitat enhancement to allow for reintroduction of elk in conjunction with NDOW is an objective to be attained through implementation of the [Wells RMP] preferred management alternative.

Table 5. Reasonable and Existing Numbers.[1]

MANAGEMENT AREA		SEASON OF USE	REASONABLE NUMBERS	EXISTING NUMBERS[2]	REASONABLE NUMBER AUMS
Pilot Mountain Mgt. Area	Spruce/Goshute RCA	1/01-12/31	30	40	288
		11/01-3/31	60	55	240
	Pilot/Crittenden RCA	1/01-12/31	30	20	288
		11/01-3/31	170	50	680
Jarbidge Mountain Mgt. Area	ONeil/Salmon Falls RCA	11/01-3/31	90	0	360
		4/01-10/31	10	0	56
	Marys River RCA	11/01-3/31	10	0	40
Total		winter use	330	105	1,320
Total		summer use	10	0	56
Total		yearlong use	60	60	576
Resource Area Total			400	165	1952

1 Information in this table has been brought forward from the Proposed Wells RMP and Final Environmental Impact Statement to show seasonal use and reasonable/existing numbers by management area (RCA) (see Table A-2 on pages A-6 to A-9).

2 This table reflects existing numbers as identified in the Approved Wells RMP. The Jarbidge Mountains were identified as a potential elk reestablishment area in the Wells RMP. Elk were reestablished into the Jarbidge Mountains in 1990.

***Short and Long-Term Management Actions** (As identified in the Approved Wells RMP):*

1. Maintain all existing wildlife projects.

2. Continue to monitor the interaction between wildlife habitat condition and other resource uses and consider adjustments in livestock seasons of use to improve or maintain essential and crucial wildlife habitats.

3. Improve habitat in areas identified as potential reintroduction sites for elk as previously identified by the NDOW.

4. Manage 2,600 acres of nonaquatic riparian aspen and 1,000 acres of mountain mahogany habitats.

5. Chain or burn, and seed 5,500 acres to improve crucial big game habitat.

6. Wildlife habitat management plans (HMPs) will follow the development of Allotment Management Plans as closely as possible. HMPs for wildlife will be developed in the following order:

a. O'Neil/Salmon Falls	e. Pilot/Crittenden
b. Cherry Creek	f. Goose Creek
c. Spruce/Goshute	g. Ruby/Wood Hills
d. Mary's River	h. Metropolis

LIMITED GROWTH ALTERNATIVE (1,000 ELK):

This alternative recognizes that elk have pioneered suitable habitats within the WRA outside the Pilot and Jarbidge Mountain Management Areas and in some instances have established self-sustaining populations. Under this alternative, elk management objectives would be identified for six management areas within the WRA (Map 4, Table 1) to support a total resource area target elk population of 1,000 elk (plus or minus 10 percent) (Table 2). The total resource area target elk population level under this alternative would be based on current growth and harvest estimates projecting a total resource area population that would be achieved by 1998.

Objective:

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private and public land resources.

Management Determinations:

1. Manage elk habitat in good or better condition within six management areas within the WRA (Map 4, Table 1) to provide forage to sustain a total resource area target elk population level of 900-1,100 (Table 2).

2. The following habitat development projects would be completed: a) fifteen water developments to supplement existing waters and allow for more beneficial use of available habitat; and 2) modification of 30 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements.

3. Management Determinations 3 thru 16 listed under the Proposed Plan would also apply.

MODERATE DENSITY ALTERNATIVE (3,500 ELK):

Under this alternative, elk management objectives would be identified for six management areas within the resource area (Map 4, Table 1) to support a target population level of 3,500 elk (plus or minus 10 percent) (Table 2). This target population level is based on an elk density level of 2.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within

the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

Objective:

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private and public land resources.

Management Determinations:

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 1) to provide forage to sustain a total resource area target elk population level of 3,150-3,850 (Table 2).

2. The following habitat development projects would be completed: a) 35 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 55 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 3,500 acres of vegetation manipulation to enhance elk habitat.

3. Management Determinations 3 thru 16 listed under the Proposed Plan would also apply.

HIGH DENSITY ALTERNATIVE (4,800 ELK):

Under this alternative, elk management objectives would be identified for six management areas within the resource area (Map 4, Table 1) to support a target population level of 4,800 elk (plus or minus 10 percent) (Table 2). This target population level is based on an elk density level of 3.5 elk/square mile multiplied by the amount of acres of moderate to high potential habitat located on public lands within the management area (Table 3). To further address the potential for conflict associated with elk use on adjacent private land resources, this density level was further reduced by multiplying the target population level by an adjustment factor determined by the percentage of public lands within the management area (Table 4). These adjustment factors were developed by the Task Force Group to promote a conservative yet flexible approach to elk management in the WRA.

Objective:

1. Manage public lands in the WRA on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private and public land resources.

Management Determinations:

1. Manage elk habitat in good or better condition within six management areas within the resource area (Map 4, Table 1) to provide forage to sustain a total resource area target elk population level of 4,320-5,280 (Table 2).

2. The following habitat development projects would be completed: a) 45 water developments to supplement existing waters and allow for more beneficial use of available habitat; b) modification of 55 miles of existing fence or construction of elk pass structures to reduce conflicts with elk seasonal movements; and c) 5,000 acres of vegetation manipulation to enhance elk habitat.

3. Management Determinations 3 thru 16 listed under the Proposed Plan would also apply.

MAXIMUM ELK DENSITY ALTERNATIVE (12,868 ELK):

Under this alternative, the management of elk is emphasized. Utilizing density criteria applied to all public acres within the resource area, this alternative would maximize elk populations to a level of approximately 12,868. The BLM, with input from the NDOW, determined that the WRA contains approximately 1,041,978 acres of moderate to high potential elk habitat and 3,232,779 acres of low to moderate potential habitat (Table 8). Based on existing information, elk density estimates for similar Great Basin habitat types were established as follows: 0.5 - 2.5 elk/square mile for low to moderate habitat, and 2.5 - 4.0 elk/square mile for moderate to high habitats. An average density of 3.25 elk/square mile for moderate to high habitat and 1.5 elk/square mile for low to moderate habitat was applied to the available public land acreage within the resource area within each category to determine the maximum elk population within the WRA that could be sustained at the expense of other resource uses. Applying elk density figures to all potentially available habitat within the resource area does not meet the Planning Criteria identified to guide the development of this amendment to the resource plan; i.e. elk populations will be set at a level consistent with other existing resource values and uses. In addition, input received during scoping indicated that managing elk populations at this high level could potentially result in conflicts associated with private land depredation greater than the NDOW would be capable of managing. Therefore, this alternative was considered but eliminated from further discussion.

LIMITED GROWTH NORTH OF I-80 ALTERNATIVE (800 ELK):

This alternative is similar to the Limited Growth Alternative in that it recognizes that elk have pioneered suitable habitats within the WRA outside the Pilot and Jarbidge Mountain Management Areas and in some instances have established self-sustaining populations. However, under this alternative, management objectives would be identified only for those areas currently supporting self-sustaining populations or containing occupied habitat; i.e. four management areas north of I-80 (Map 4, Table 1). However, this alternative does not address the following issues:

1) Moderate to high potential elk habitat exists south of I-80.

2) Establishing elk management objectives within the WRA only for management areas north of I-80 would not recognize the potential for elk to pioneer available habitats south of I-80.

3) Elk are beginning to pioneer suitable habitat south of I-80 from established populations within the resource area and/or immigration from outside the resource area as documented by isolated elk observations.

For the above reasons, this alternative was considered but eliminated from further discussion.

NO ELK ALTERNATIVE:

Under this alternative, management objectives would not be developed for elk in the WRA. The existing Wells RMP would be modified to eliminate existing elk management objectives for the Jarbidge and Pilot Mountain Management Areas. As a result the reasonable number of elk established for the WRA would be zero and all existing elk would be removed. For the following reasons, this alternative was considered but eliminated from further discussion:

1) The impacts associated with the management of elk within the Jarbidge and Pilot Mountain Management Areas was analyzed in the EIS for the Wells RMP. The ROD for the Wells RMP established management objectives for a reasonable number of 400 elk within the Jarbidge and Pilot Mountain Management Areas.

2) Elk have "pioneered" suitable habitats within the WRA outside the Jarbidge and Pilot Mountain Management Areas and elk numbers currently range from 390-575. The purpose of this plan amendment, in part, is to address the pioneering elk issue by identifying elk habitat management areas, objectives, and target elk population management levels within the WRA.

3) Existing monitoring data supports the conclusion that existing numbers of elk are currently not preventing the attainment of other multiple use objectives were elk have "pioneered" outside the Jarbidge and Pilot Mountain Management Areas.

4) The purpose of this plan amendment, in part, is to establish elk habitat management areas and target elk population management levels within the WRA.

NO LIVESTOCK ALTERNATIVE:

Under this alternative, livestock grazing would not be permitted on the public lands within the WRA and the elk population would be allowed to expand to a level consistent with good range and habitat conditions as supported by monitoring. This alternative was considered but eliminated from further discussion for the following reasons:

1) The impacts associated with livestock grazing in the WRA were analyzed in the Wells RMP/EIS. The objective for livestock management as established in the ROD for the Wells RMP is "to provide for livestock grazing consistent with other resource uses resulting in an increase in 4,912 AUMs from three to five year average use of 288,934 AUMs to a level of 293,846 AUMs."

2) The Planning Criteria identified for this plan amendment, in part, states elk population targets will be set at a level consistent with other existing resource values and uses.

III. AFFECTED ENVIRONMENT

GENERAL

The WRA is one of two administrative subunits of the Elko District and is located in northeastern Nevada (Map 1). It basically includes the eastern half of Elko County.

The WRA can be characterized as being arid to semi-arid. Low elevation valley areas receive only about eight inches of precipitation with higher elevation mountain areas receiving over twenty inches annually.

The southern two-thirds of the WRA is in the Basin and Range Physiographic Province and the northern portion lies within the Columbia Plateau Province. The Basin and Range Province is characterized by five to fifteen mile wide mountain ranges and valleys. Mountain ranges trend north to north-northeast and are fifty or more miles long. The Columbia Plateau Physiographic Province characteristically consists of rolling plateau lands of low relief broken by occasional buttes and dissected by steep narrow canyons.

This section of the environmental assessment provides additional information to assist the reader in understanding the existing situation and the current problems encountered with managing elk in the WRA. For a more detailed discussion of the environment within the areas of concern, please refer to the Wells RMP and Environmental Impact Statement (EIS) approved July 16, 1985.

The following critical elements of the human environment are not present or are not affected by the alternatives presented in this EA:

Air Quality
Areas of Critical Environmental Concern
Cultural Resources
Farm Lands (prime or unique)
Floodplains
Native American Religious Concerns
Paleontology
Wastes (hazardous or solid)
Water Quality (drinking/ground)
Wild and Scenic Rivers

Table 6 summarizes the resource issues brought forward for analysis in Section IV (Environmental Consequences) through scoping and input from Bureau specialists.

Table 6. Summary of Resource Issues.

Resource Issue	Resource Category
Conflicts with existing wildlife uses.	Terrestrial Wildlife Habitat
Range conditions and available forage.	Vegetation
Conflicts with existing grazing uses.	Livestock Grazing Wild Horses
Water availability.	Water
Impacts to riparian habitat values.	Riparian/Stream Habitat
Constraints on other resource users.	General - All Resource Categories
Conflicts with private land resources.	Lands
Recreational conflicts.	Recreation
Impacts to visual resources.	Visual Resources
Socio/Economic impacts.	Economic Conditions Population Income and Employment Public Attitudes
Impacts to Wilderness Study Areas	Wilderness
Impacts to Endangered, Threatened, or Candidate Species	Endangered, Threatened, or Candidate Species

The following additional information is displayed by resource category to supplement and/or update the description of the existing environment contained in the Wells RMP/EIS.

TERRESTRIAL WILDLIFE HABITAT

Big Game Populations and Habitat Conditions

The WRA provides habitat for mule deer, pronghorn antelope, bighorn sheep, and elk. Based on existing habitat monitoring data, mule deer summer ranges are generally in fair to good condition, while winter ranges vary from poor to good condition. Pronghorn antelope summer, winter, and yearlong habitat are rated in poor to good condition. Please refer to Appendix A3-1 on page A3-2 of the Wells RMP/EIS for a listing of existing and reasonable numbers for wildlife and big game habitat conditions.

Elk habitat potentials in the WRA have been classified as either low to moderate or moderate to high. Experience in Utah and Idaho has shown elk habitat densities for Great Basin habitat types similar to those in the WRA range from 0.5 elk/square mile in low potential habitats to 4.0 elk/square mile in high potential habitats (Table 7).

Table 7. Elk densities for low, moderate, and high potential habitats.

HABITAT POTENTIAL	ELK DENSITY/SQUARE MILE
Low	0.5-1.5
Moderate	1.5-2.5
High	2.5-4.0

Based on available habitat information and input from the NDOW, elk habitat potentials within the WRA have been classified into two categories; low-moderate and moderate-high (Table 8).

Table 8. Potential Elk Habitats within the Wells Resource Area.

HABITAT POTENTIAL	PUBLIC ACRES	ELK DENSITY/SQUARE MILE
Low to Moderate	3,232,779	0.5-2.5
Moderate to High	1,041,978	2.5-4.0

The most limiting factor identified on low to moderate habitat potential rangelands was water availability within summer ranges. Winter range was not identified as a limiting factor. Elk are expected to winter on wind swept ridgelines and south facing exposures on public and private rangelands. However, severe winter conditions could force elk into adjacent private agricultural lands.

The locations of current elk use areas and elk habitat potentials are shown on Map 2.

At the time the Wells RMP was approved, there was no official population estimate for elk in the WRA. The best available information at the time simply acknowledged that numbers were increasing and placed herd numbers between 50 and 100. Elk habitat management objectives were established to support a reasonable number of 400 elk within the resource area (Table 5). The elk population in the WRA is currently estimated at 390-575 (Table 2).

The Wells RMP/EIS (Appendix Table A3-2) identified elk habitat in the Pilot Mountain Management Area (Pilot/Crittenden and Spruce/Pequop Resource Conflict Areas (RCA)) as being in good condition. Elk habitat in the Jarbidge Mountains Management Area (Marys River and ONeil/Salmon Falls RCA's) was identified as either in good condition or unknown. The Wells RMP/EIS identified some areas within these management units may be in less than good elk habitat condition due to livestock competition.

Elk are very adaptable and utilize a wide variety of forage types. Although elk are primarily grazing animals, browse constitutes a significant portion of their diet. Since elk are primarily grazers, the potential exists for competition between livestock and wild horses for available forage.

Utilization by elk outside the Pilot Mountain Management Area is very dispersed and is difficult to measure at the current low population levels. To date, monitoring has determined that elk use outside the Pilot and Jarbidge Mountain Management Areas is not preventing attainment of existing multiple use objectives. The results of monitoring conducted within areas currently being utilized by pioneering elk conclude that at current population levels elk have been making use of forage which is largely unavailable to livestock due to terrain and water availability.

Current habitat studies within the Pilot Mountain Management Area indicate current elk populations are not causing adverse impacts or degradation to their own habitat.

Utilization data collected on Pilot Mountain in 1989 and 1993 indicate use of key forage species has been below objective levels for key forage bunchgrasses. Utilization was above objective levels in 1989 and below objective levels in 1993 for key forage browse species (Table 9). High utilization levels of browse in 1989 was recorded on most big game winter ranges in the WRA and was mostly attributed to minimal growth response to drought conditions. This available data seems to indicate that elk movements away from or out of the Pilot Mountain Management Area are the result of social behavior factors rather than forage limitations.

Table 9. Pilot Mountain key forage use levels.

KEY SPECIES	OBJECTIVE LEVEL	1989 USE[1]	1993 USE[1]
Bluebunch wheatgrass	50%	26%	6%
Antelope bitterbrush	45%	71%	37%

[1] Utilization measured at key areas representing big game use only. Utilization figures for bitterbrush represent combined use by elk and mule deer. Utilization figures for bluebunch wheatgrass represents use by elk only.

The NDOW has begun monitoring elk movements in the Goose Creek management unit with the use of radio collars to obtain more information on seasonal elk movements within that portion of the WRA and also to determine what impact elk immigration from outside the resource area is having on population expansion. It will take at least 3-5 years before any conclusions can be made.

VEGETATION

For a description of the vegetation types which exist in the WRA, please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS.

Based on professional judgement, the Wells RMP/EIS estimated 26 percent of the resource area was in good or excellent ecological condition (the comparison of what the site is producing now to what the site is naturally capable of producing) in 1985. Currently, professional judgement places 37 percent of the resource area in good or excellent ecological condition. An ecological site inventory (ESI) has been completed on approximately 67% (2.9 million acres) of the WRA. Based on an analysis of soils and vegetation data, range condition has been determined for those lands inventoried and classifies 47 percent of the resource area in good or excellent ecological condition (Table 10).

Table 10. Range Condition in the Wells Resource Area.

YEAR	POOR CONDITION (EARLY SERAL)	FAIR CONDITION (MID SERAL)	GOOD CONDITION (LATE SERAL)	EXCELLENT CONDITION (POTENTIAL NATURAL COMMUNITY)
1985[1]	20%	54%	25%	1%
1993[2]	13%	50%	32%	5%
1994[3]	15%	38%	42%	5%

[1]1985 Wells RMP/EIS, professional judgement.
[2]1993 WRA Staff, professional judgement.
[3]1994 WRA ESI (2.9 million acres).

LIVESTOCK GRAZING

The WRA currently has the following adjudicated grazing preference:

Active Preference	375,717 AUMs
Suspended Non-Use	24,184 AUMs
Total	399,901 AUMs

Adjustments in grazing use needed to achieve multiple use objectives will be based on the monitoring. A description of the BLM's adjudication process and how current land use planning policy/regulations and monitoring relate to existing livestock use can be found in Appendix A.

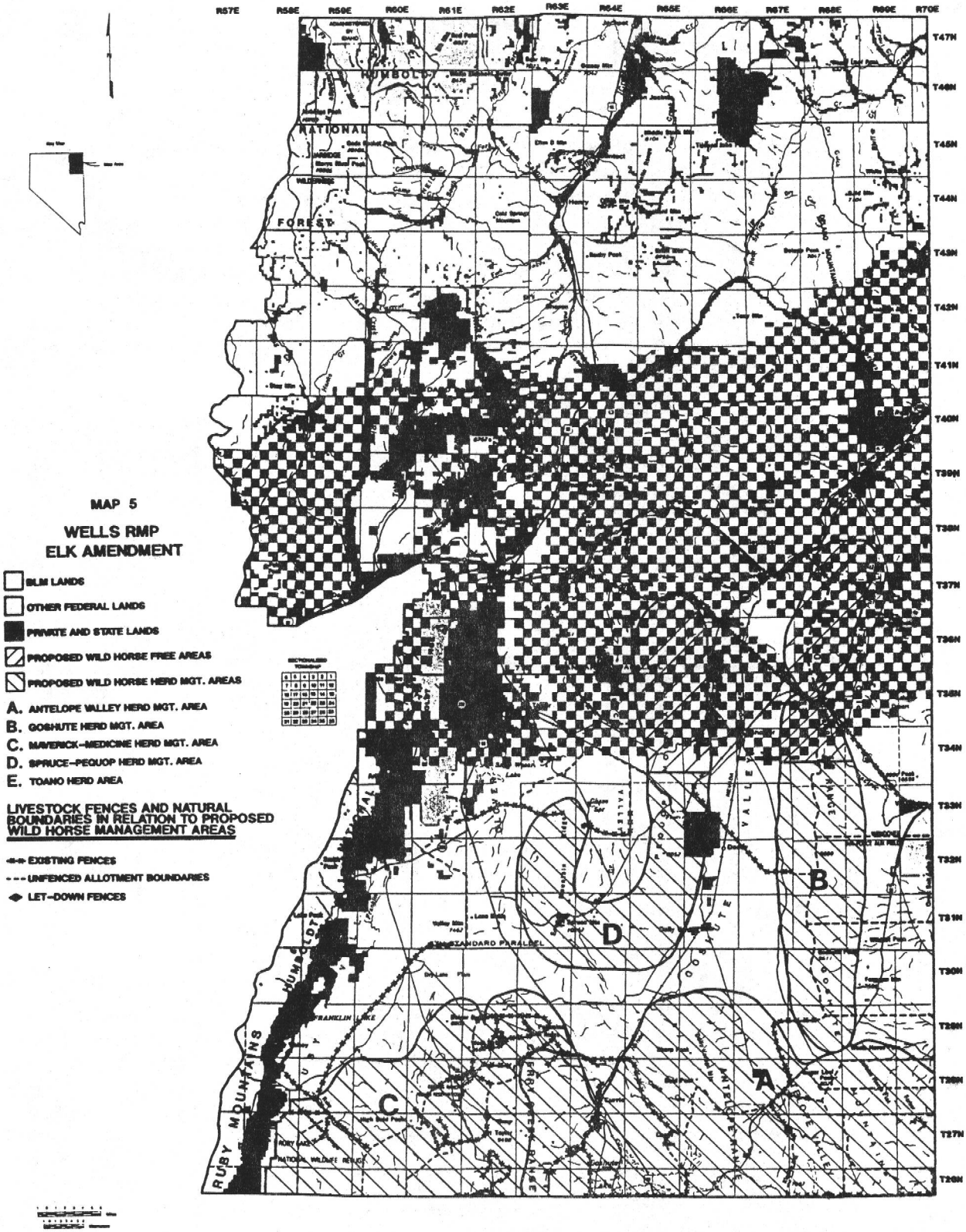
Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Livestock Grazing. Grazing Allotment Boundaries and allotment categorization are shown on Map 3-3 in the aforementioned document.

WILD HORSES

Wild horses in the WRA are currently managed within four Herd Management Area's (HMA) (Map 5) located south of I-80 in the southern half of the resource area. The initial herd sizes for each HMA established in the Wells RMP Approved Wild Horse Amendment and Decision Record, signed August 2, 1993 are outlined in Table 11.

Table 11. Wild Horse Herd Management Area Initial Herd Sizes.

HERD AREAS	INITIAL HERD SIZE
Antelope Valley	240
Goshute	160
Maverick-Medicine	389
Spruce-Pequop	82
Total	871


MAP 5
WELLS RMP
ELK AMENDMENT
BLM LANDS
OTHER FEDERAL LANDS
PRIVATE AND STATE LANDS
PROPOSED WILD HORSE FREE AREAS
PROPOSED WILD HORSE HERD MGT. AREAS
A. ANTELOPE VALLEY HERD MGT. AREA
B. GOSHUTE HERD MGT. AREA
C. MAVERICK–MEDICINE HERD MGT. AREA
D. SPRUCE–PEQUOP HERD MGT. AREA
E. TOANO HERD AREA
LIVESTOCK FENCES AND NATURAL BOUNDARIES IN RELATION TO PROPOSED WILD HORSE MANAGEMENT AREAS
EXISTING FENCES
UNFENCED ALLOTMENT BOUNDARIES
LET–DOWN FENCES
R57E
R58E
R59E
R60E
R61E
R62E
R63E
R64E
R65E
R66E
R67E
R68E
R69E
R70E
T47N
T46N
T45N
T44N
T43N
T42N
T41N
T40N
T39N
T38N
T37N
T36N
T35N
T34N
T33N
T32N
T31N
T30N
T29N
T28N
T27N
T26N
HUMBOLDT
NATIONAL
FOREST
RUBY MOUNTAINS
STANDARD PARALLEL
A
B
C
D

The management of wild horses begins at the herd sizes specified above. Future adjustments to the initial herd size will be based on monitoring.

WATER

A sufficient amount of perennial water (springs and streams) exists within the resource area to provide an adequate quantity of water for existing uses by big game (including elk), livestock, and wild horses. However, the availability of surface water frequently becomes the limiting factor in determining livestock distribution and the distribution and size of wild horse and wildlife populations. Within some management units, particularly summer range, lack of water on public lands will limit use of available habitat by elk, potentially increasing competition for available water and forage resources. Limitations concerning available waters for wild horses have been addressed in the management determinations for the selected alternative in the 1993 RMP Approved Wild Horse Amendment and Decision Record through development of additional waters for wild horses.

The Wells RMP identified 250 spring enhancement/development projects to be constructed to enhance terrestrial wildlife habitat. At the present time, about 25 spring enhancement/development projects and five water facilities (guzzlers) have been completed. Those spring enhancement/development projects identified in the Wells RMP will improve water quality and quantity for big game, livestock, and wild horses.

RIPARIAN/STREAM HABITAT

Of the 452 miles of stream and 11,413 acres of riparian vegetation inventoried in the WRA, 220 miles and 5,928 acres were on BLM-administered lands. Of this total, 161 miles and 4,350 acres were rated in poor to fair condition. Further discussion of riparian/stream habitat conditions in the WRA can be found under this heading in Chapter 3 (Affected Environment) of the Wells RMP/EIS.

Bureau Policy currently places a high priority on the improvement of riparian/stream habitat conditions. All multiple use objectives, including riparian habitat improvement, are monitored and evaluated to determine the need for changes in existing management. Currently in the WRA, changes in grazing management to achieve riparian objectives have included corridor fencing, reduced stocking levels, and/or changes in season of use. At current population levels, elk have not been identified as a contributing factor to the cause of less than good riparian/stream habitat conditions.

LANDS

The WRA consists of approximately 5.7 million acres. About 4.3 million of these acres are public lands administered by the BLM. The public land pattern is generally consolidated, with the exception of a forty mile wide band of "checkerboarded" land ownership consisting of alternating federal and private sections of land. This pattern was created when the Act of July 1, 1862 granted alternating sections of land to the Union Pacific and Central Pacific Railroads as incentive for construction of the transcontinental railroad.

Federal ownership amounts to about 76% of the land within the WRA boundaries. The remaining 24%, consisting of privately owned land, is concentrated primarily along the forty mile wide "checkerboard" area. Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Lands.

RECREATION

The public and private lands within the WRA have been recognized by the public for their use in dispersed outdoor recreation. As described in the Wells RMP, recreation use in the WRA continues to be dispersed and includes camping, hunting, fishing, and sightseeing. Recreation within the WRA is considered to have a positive benefit to the local economies with hunting and fishing the predominant forms of recreation. The public demand for elk hunting opportunities far exceeds what current resources can sustain. In 1992, the NDOW reported there were 5,656 applications, statewide, for 115 bull elk tags; or 49 applicants for every available tag.

Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on Recreation.

VISUAL RESOURCES

The WRA contains a variety of scenic qualities which have been classified into resource management classes. In much of the resource area there are north-south oriented mountain ranges separated by large open valleys. In most instances, the mountain ranges possess relatively high scenic values while the valleys tend to be monotypic and possess low scenic values. Information on management classes and their development can be found in the WRA visual resource management inventory files. Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for more information on Visual Resources.

ECONOMIC CONDITIONS

The WRA covers the eastern portion of Elko County. However, the Elko County economy, at large, is the principal economic area to be potentially affected by the resource decisions under consideration. And, because of the manner in which data is organized and made available, the affected environment for purposes of economic analysis, must necessarily be defined as Elko County. Wherever possible this analysis will focus on the local economy within the WRA, but analysis of potential effects must also be inferred from county-wide data.

POPULATION

In spite of phenomenal growth, beginning in 1985, attendant to the expansion of gold mining and gaming related recreation and tourism, Elko County remains predominately rural and sparsely populated. Current official estimates provided by the Nevada State Demographer's Office place Elko County's population at 37,740 for 1992. Population density for the County averages about 2.2 persons per square mile. Approximately 44 percent of the County's population is concentrated in the city of Elko (16,580 persons), with an additional 15 percent in the communities of Carlin (2,270), Wells (1,230), and West Wendover (2,170).

Within the WRA, the population is estimated at 6,360 persons for 1992 (Nevada State Demographer). This includes estimates of 2,440 persons in East Line Township; 1,300 in Jackpot Township; 110 in Jarbidge Township; 380 in Tecoma Township; and 2,130 in Wells Township.

INCOME AND EMPLOYMENT

Table 12 lists the industrial sector and total income and employment and relative importance of each sector for the study area. Figures for 1991 show Services, Trade, Government, and Mining to be the primary sources of employment.

In 1991, Services provided the major source of income, estimated at 32.3 percent of total industrial income for the county. The Services industry sub-sector, Hotels and Other Lodging Places, produced slightly more than 50 percent ($69.4 million) of the total industrial income ($138.5 million) produced by all service industries. This underscores the strength and importance of gaming and entertainment related - as well as outdoor recreation, hunting and fishing - tourism to the county economy. Income produced by Government, Mining, and Trade followed, in that order of relative importance.

Metal (gold) mining dominates mining activity, producing 96.5 percent ($59.9 million) of the total $62.1 million of mining income. However, the bulk of all mining activity is located in the western part of the county, with only two operations active in the WRA.

County-wide, agriculture produces 3.6 percent of total income and provides 5.6 percent of the jobs. However, agriculture is of relatively higher significance in the more sparsely populated eastern part of the county, where it is traditionally viewed as the economic base. Cash receipts from marketings of livestock and livestock products totaled $49.7 million for the county in 1991, with an additional $1.8 million from crops. This yielded an estimated net farm proprietors' income of $8.7 million, farm labor and other perquisites (room and board,etc.) income estimated at $4.0 million, and other farm labor (custom, etc.) income estimated at $293 thousand.

Table 12. Elko County Total Income and Employment-1991.

Income Source	Employment		Income	
	Persons	Percent	$1,000	Percent
Services	7,424	39.2	138,546	32.3
Government	2,861	15.1	73,114	17.0
Mining	1,393	7.3	62,084	14.5
Trade	3,338	17.6	61,267	14.3
Construction	1,274	6.7	40,491	9.4
Transportation and Public Utilities	756	4.0	26,330	6.1
Agriculture	1,062	5.6	15,416	3.6
Finance, Insurance and Real Estate	630	3.3	7,837	1.8
Manufacturing	223	1.2	4,209	1.0
TOTAL	18,961	100.0	429,294	100.0

Source: Regional Economic Information System, Bureau of Economic Analysis, 1994.

The service industry is also of primary economic importance within the WRA. The gaming and entertainment centers of Jackpot and Wendover attract many visitors. In addition to dispersed recreational use of public lands within the WRA, other recreational attractions within the area include the Ruby Lake National Wildlife Refuge and the Humboldt National Forest which include the Jarbidge Wilderness, the Ruby Mountains, and Angel Lake.

Outdoor recreation, particularly elk hunting represents an important economic resource, both to the state and the county with public demand for elk hunting far in excess of what currently available resources can sustain. As previously stated, in 1992, the NDOW reported, statewide, there were 49 applicants for every available elk tag. Because of the limited number of elk available for harvest under current herd management practices, only about 5 percent of the available tags are allocated to non-residents. The current fee for elk tags, in addition to the hunting license fee, is $100.00 for residents and $500.00 for non-residents. A general hunting license for residents is $20.50; non-residents pay $100.50. In addition, there is a $10.00 application fee, $5.00 of which is allocated to a state fund specifically created to provide compensation, as necessary, for elk depredation damages.

Additional revenues are generated for the state by an annual bid-tag for elk, authorized by the Nevada State Legislature, and initiated in 1990. This bid-tag has been offered at auction for the past four elk hunting seasons, and has produced a total revenue of $77,000, or an average of $19,250 per tag (NDOW).

The number of elk tags issued in 1993 totaled 215, statewide. Of those, 30 were for hunting in the WRA. It is estimated that these 30 tags provided 210 hunter days[1], accompanied by 267 non-consumptive wildlife associated recreation days[2], which together generated $21,500 in expenditures[3] and 0.4 full-time equivalent (FTE) jobs (800 hours of labor) in Elko County. Local area income derived from these expenditures is estimated at $6,364[4]. Willingness-to-pay values, which quantify the value of the wildlife-associated recreation, both for the hunter and the non-consumptive wildlife viewer, are estimated at $28,130[5].

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[1]Hunter days are estimated at 7 days per hunt. Source: Nevada Department of Wildlife, December 1988; Biological Bulletin No. 9, Nevada Survey of the Economic Value of Trophy Big Game and Deer Harvest.

[2]Non-consumptive wildlife associated recreation days are estimated at 1.27 days per hunter day (Nevada Department of Wildlife estimate used for Wells RMP).

[3]Hunter and non-consumptive expenditures per day are estimated at $74.13 and $22.33 respectively. Source: U.S. Fish and Wildlife Service, November 1982; 1980 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation - Nevada. Values were adjusted to 1993 dollars with the Gross National Product (GNP) Implicit Price Deflator.

[4]Income and employment estimates are approximations based on adjusted employment coefficients and income multipliers. Source: An Input-Output Model of the Economy of Humboldt and Lander Counties; Fillo, Frank D., Hans D. Radtke, and Eugene P. Lewis, 1978. Nevada Review of Business and Economics; Reno, NV.

[5]Willingness-to-pay values are estimated at $87.92 per hunter day, and $36.23 per non-consumptive wildlife-associated recreation day. Source: Nevada Department of Wildlife, December 1988: Biological Bulletin No. 9, Nevada Survey of the Economic Value of Trophy Big Game and Deer Harvest and U.S. Forest Service, 1990 Resources Planning Act, National Forest Service Benefit Values. Values were adjusted to 1993 dollars with the GNP Implicit Price Deflator.

Total personal income for Elko County, in 1991, is estimated at $529,436,000. This includes $429,294,000 of industrial earnings (Table 12) plus income from dividends, interest, rent, transfer payments, and other adjustments. Elko County's per capita personal income for 1991 was estimated at $14,887, while the state average was $19,812.

The unemployment rate as of December, 1992, was reported as 5.9 percent; with a total labor force of 16,360, there were 970 persons unemployed at that time. Current figures for December, 1993, indicate an unemployment rate of 6.5 percent with 1,170 persons unemployed out of a labor force of 17,250.

PUBLIC ATTITUDES

Generally, BLM grazing permittees are of the opinion that the entire public land forage resource has already been adjudicated and there is no forage available for elk. When public land grazing privileges were adjudicated in the 1960's (Appendix A), the forage demand which could not be supported by the rangeland resource was placed in "suspended non-use". Suspended non-use AUMs (an AUM is an animal unit month which is the amount of forage required to support a cow and calf or five sheep for one month) are not activated or authorized for use until the forage is determined available. Presently there are 24,184 AUMs of suspended non-use within the WRA. Livestock operators feel this suspended non-use coupled with money spent on range improvements and development has helped to achieve the upward trends in range conditions during the past eight years. Therefore, livestock operators feel that a reduction in livestock use to accommodate elk use or the allocation of any available forage to elk rather than livestock would not be acceptable and current livestock suspended non-use AUMs should be activated before elk are given any forage privileges.

In addition, based on opinions expressed during public scoping and Task Force Group meetings, ranching interests are not confident in the NDOW's ability to mitigate impacts to private lands, particularly in the long-term, when elk populations increase. They are also concerned that once elk become well established, pressure for increased hunting opportunities will override private landowner or land management agency input. As a result, ranching interests and grazing permittees fear that increased elk populations would result in reductions in livestock numbers on public lands and adverse economic impacts to private lands. Grazing permittees also feel that their grazing privileges may be limited in the future as a result of designation of special areas to protect key habitats. Generally, ranching interests view increasing elk populations in the WRA as something that offers the public benefits at the risk of private land resources.

The attitude of most hunters and recreationists is that the forage resource in the WRA can sustain an elk population higher than current levels. The public demand for elk in Nevada is very high. For example, in 1992 there were 5,656 applicants for 115 available resident bull elk rifle tags statewide (49 applicants for each available elk tag). In 1994 there were 8,171 applicants for 111 available resident bull elk rifle tags statewide (74 applicants for each available elk tag). This demand is expected to increase as population of hunters in the state continues to grow. Generally, the attitudes of sportsmen are mixed. Some members of the hunting population feel that perhaps existing livestock numbers should be reduced to a level which would have less impact on big game habitat. However, others wish to see elk use in the WRA maximized without compromising existing livestock and wild horse use levels.

The NDOW believes that the WRA has the potential to support an elk population greater than current levels without impacts to existing uses. The NDOW also acknowledges that elk use of private land resources will increase as populations expand within the resource area. However, they believe that they can resolve those impacts to private landowners through currently available legislation and Nevada Wildlife Commission policy.

WILDERNESS

As per Section 603 of the Federal Land Policy and Management Act (FLPMA) of 1976, an inventory of the roadless areas of more than 5,000 acres was completed in the WRA. This inventory resulted in a designation of four Wilderness Study Areas (WSAs) totalling 175,951 acres in the WRA. The ROD for Wells RMP recommended portions of the four WSAs totalling 145,287 acres as preliminarily suitable for wilderness designation. Please refer to Chapter 3 (Affected Environment) of the Wells RMP/EIS for further information on WSAs.

ENDANGERED, THREATENED, OR CANDIDATE SPECIES

Federally-listed endangered, threatened, or candidate species potentially occurring on public lands in the Wells Resource Area are shown in Table 13.

IV. ENVIRONMENTAL CONSEQUENCES

This section outlines the environmental consequences by alternative that would result from implementation of the management determinations listed above. These projections are based on available information and knowledge of the area by personnel in the WRA and the Elko District. Any numbers given are approximate and are used as a basis to quantify impacts. The reader should not infer that they reflect exact or precise totals.

An analysis of impacts for each alternative and the effectiveness of proposed habitat development projects to mitigate the potential impacts of each alternative is shown in Appendix B.

Proposed Plan (2,200 elk):

GENERAL

Under the Proposed Plan, elk management objectives would be established for six management areas within the WRA, to support a target population level of 2,200 elk (plus or minus 10 percent). This total resource area target population level would include 1,640 (plus or minus 10 percent) north of I-80 and 560 (plus or minus 10 percent) south of I-80.

Appendix C (Figure C-1 and Table C-1) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 1,640 elk (plus or minus 10 percent) would be achieved within about 6-7 years. Target levels could be achieved sooner depending upon whether or not augmentation and/or reestablishment efforts occur.

To maintain the target population level under the Proposed Plan north of I-80, the harvest strategy would have to shift from limited harvest to maintenance harvest. Beginning 3-4 years prior to achievement of target levels, the number of animals harvested would be increased from approximately 50 (35 bull tags, 15 cow tags) to approximately 65 (35 bull tags, 30 cow tags).

Table 13. Federally-listed endangered, threatened, or candidate species potentially occurring on public lands in the Wells Resource Area.

Common Name	Scientific Name	Status[1]
Peregrine falcon	Falco peregrinus anatum	E
Bald eagle	Haliaeetus leucocephalus	E
Lahontan cutthroat trout	Oncorhynchus clarki henshawi	T
Pygmy rabbit	Brachylagus Idahoensis	C-2
Spotted bat	Euderma maculatum	C-2
Pacific western big-eared bat	Plecotus townsendii townsendii	C-2
Preble's shrew	Sorex preblei	C-2
Northern goshawk	Accipiter gentilis	C-2
Ferruginous hawk	Buteo regalis	C-2
Western snowy plover	Charadrius alexandrinus nivosus	C-3C
Columbia sharp-tailed grouse	Tympanuchus phasianellus columbianus	C-2
White-faced ibis	Plegadis chichi	C-2
Loggerhead shrike	Lanius ludovicianus	C-2
Relict dace	Relictus solitarius	C-2
Interior redband trout	Oncorhynchus mykiss gilberti	C-2
Spotted frog	Rana pretiosa	C-1
California floater	Anodonta californiensis	C-2
Mattoni's blue butterfly	Euphilotes rita mattoni	C-2
Nevada viceroy	Limenitis archippus lahontani	C-2
Sulphur Springs buckwheat	Eriogonum argophyllum	C-2
Elko rockcress	Aribis flacifructa	C-2
Goose Creek milkvetch	Astragalus anserinus	C-1
Barren Valley collomia	Collomis renacta	C-2
Sierra Valley ivesia	Ivesia rhypara	C-2
Broad fleabane	Erigeron latus	C-2
Grimy ivesia	Ivesia rhypara var. rhypara	C-2
Bruneau River prickly phlox	Leptodactylon glabrum	C-2
Packard stickleaf	Mentzelia packardiae	C-2
Cottam cinquefoil	Potentilla cottamii	C-2
Nachinger catchfly	Silene cachlingerae	C-2
Meadow pussytoes	Antennaria arcuata	C-2
Robbins milkvetch	Astragalus robbinsii var. occidentalis	C-2

[1]E = endangered (in danger of extinction).
T = threatened (likely to become an endangered species in the foreseeable future).
C-1 = candidate species for which enough substantial information is available to support proposals to list as threatened or endangered.
C-2 = candidate species for which there is some evidence of vulnerability but not enough data to support listing as threatened or endangered.
C-3C = candidate species which have been proven to be more abundant or widespread than previously believed and are not subject to any identifiable threat.

It is difficult to predict at what rate elk would pioneer available habitats south of I-80. Elk are expected to pioneer available habitats south of I-80 as elk populations expand elsewhere in the resource area. Periodic increases in elk populations would also occur as a result of approved augmentation and/or reestablishment efforts within the criteria outlined in the management determinations for the Proposed Plan. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 560 elk (plus or minus 10 percent) would be achieved within about 11-12 years.

To maintain the target population level under the Proposed Plan south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 25 (15 bull tags, 10 cow tags) to approximately 35 (15 bull tags, 20 cow tags).

Wildlife

The potential for competition between elk and other native wildlife species would exist as elk populations increase within the resource area. Competition between elk and bighorn sheep is expected to be minimal due to differences in habitat preferences and low population densities. It is difficult to predict just what seasonal use areas might be. However, under the Proposed Plan, use of crucial deer winter ranges by elk and the potential for direct competition for available browse forage would be greater than under the Limited Growth Alternative but a low level of impacts is expected. Conflicts in seasonal use areas would be identified through monitoring with priority for management given to mule deer.

Range Conditions and Available Forage

As elk numbers increase and elk begin to make use of available habitat, some reduction in range condition could occur. However, under the Proposed Plan, elk numbers would remain relatively dispersed and low level impacts are expected. The potential for degradation of range conditions would be greatest in areas of concentrated elk use such as within winter/spring use areas along ridgelines and in areas where snow conditions restrict distribution. Monitoring within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

Existing Grazing Uses

Elk populations under the Proposed Plan would continue to be supported by forage currently unavailable to existing grazing uses (livestock and wild horses) and impacts to existing grazing uses would be low (Appendix D). The degree of conflict between existing grazing uses would be identified through monitoring. Elk habitat enhancement projects would be effective in achieving maximum use of available habitat by elk, minimizing the potential for direct competition with existing grazing uses.

The potential for fence damage could increase as elk populations increase and seasonal migration patterns become established. Mitigation for fence damage would be mostly reactive as elk seasonal use areas become established. Fence damage is expected to be greatest in areas where fences would cross established travel routes. Management determinations identified under the Proposed Plan would mitigate fence damage

through fence modifications and/or construction of low maintenance elk pass structures. An estimated 45 miles of fence modification would be required to resolve fence damage conflicts.

Water

As elk numbers increase under the Proposed Plan, the demand for available waters is expected to increase. However, a low level of conflict is expected as discussed under the Limited Growth Alternative. Any increased demand for available waters associated with increased elk use would be mitigated as discussed under the Limited Growth Alternative.

Riparian Habitat

Impacts to terrestrial riparian habitats (i.e. developed and undeveloped springs, seeps, and wet meadows) would be much the same as described under the Limited Growth Alternative. Impacts would vary depending on season of use and elk population densities. Monitoring would identify conflicts and recommendations for changes in elk management.

As elk numbers increase under the Proposed Plan, impacts to stream riparian habitat by elk and/or the effects of elk use on attainment of stream riparian management objects are expected to remain minimal as discussed under the Limited Growth Alternative. Monitoring would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

Other Resource Constraints

Management constraints on other resource management activities would be the same as described under the Limited Growth Alternative.

Private Land Resources

It is impossible to predict accurately whether depredation of private land resources would occur and to what extent. As elk numbers increase, the potential for depredation of private land resources would also increase. Therefore, the potential for conflict is expected to be greater than for the Limited Growth Alternative. Conflicts with adjacent private land resources would be mitigated as discussed under the No Action Alternative.

Recreation

The impacts associated with increased recreational use would be the same as discussed under the Limited Growth Alternative. The potential for impacts associated with recreational use is expected to increase as consumptive and non-consumptive opportunities increase. However, impact levels are anticipated to be low.

Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level impacts to visual resources could occur as a result of construction of 20 water developments and 2,000 acres of vegetation manipulation

projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. The number of elk hunting tags issued under the Proposed Plan would increase slowly as the numbers of elk increase. Under the Proposed Plan, target population levels would be achieved in about 6-7 years north of I-80 and 11-12 years south of I-80. To maintain these target population levels, the number of tags issued would rise to a level of approximately 100 tags in about 8 years. Hunter days are expected to increase to about 700 days, at this time, with about 889 days of non-consumptive wildlife-associated recreation.

Total annual expenditures resulting from this level of elk hunting and recreation are estimated at about $71,742. This should create an estimated 1.2 FTE jobs (2,400 hours), and provide about $21,300 in local area income. Value derived by the hunters and recreationists is estimated at a total of $93,800 and revenues to the State from application fees should reach about $16,450. While still of no real consequence in terms of the regional economy, the effect is perceptible and positive.

It is recognized that a potential for depredation damage exists, due to the possibility of elk foraging on private land resources. Private losses might be in the form of damaged fences, loss of some grass or alfalfa hay, incidental loss of aftermath and rangeland grazing, or damage to water or irrigation facilities. Such losses as may occur are expected to be inconsequential due to the relatively small size of foraging elk herds. In most cases, these losses are fully compensable through existing legislation which enables the NDOW to respond to and/or compensate for depredation damage by elk. A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

Wilderness

The impacts to wilderness values would be the same as discussed under the Limited Growth Alternative. As elk populations in the resource area increase under the Proposed Plan, the occurrence of elk pioneering suitable habitats within designated WSAs is expected to increase. However, elk population increases within designated WSAs would not be enhanced through the management determinations listed under the Proposed Plan. Elk would occupy habitat within designated WSAs based on natural distributions and would be allowed to seek and maintain a natural balance with their habitat. As elk populations increase within designated WSAs, the impacts associated with increased consumptive and non-consumptive recreational use is expected to increase. However, impact levels are anticipated to be low.

Endangered, Threatened, or Candidate Species

The impacts to endangered, threatened, or candidate species would be the same as discussed under the No Action Alternative.

No Action Alternative:

General

Under this alternative, the environmental consequences identified in the Wells RMP/EIS remain the same. Elk habitat and population management objectives in the WRA would not change. Elk habitat management objectives would continue to exist only for the Pilot Mountain and Jarbidge Mountain Management Areas. The natural expansion of elk populations in the WRA would occur through pioneering and/or immigration into the resource area. Population expansion would be allowed to the extent that elk use is not preventing attainment of existing multiple use objectives identified in the Wells RMP. This threshold would be determined through monitoring.

Wildlife

Under the No Action Alternative, impacts to wildlife and existing wildlife habitat would remain the same as identified in the Wells RMP/EIS. The impacts to big game and big game habitats are outlined as follows:

1. The opportunities for reintroduction of native wildlife species would be enhanced or maintained.

2. Terrestrial riparian habitat would generally be improved, maintained in its current condition class, or decline.

3. Big game habitat would generally be improved from good, fair, or poor to the next higher condition class or be maintained in its current condition.

4. Identified wildlife hazards or habitat conflicts would be partially corrected.

Range Conditions and Available Forage

Under the No Action Alternative, impacts to range conditions would be the same as identified in the Wells RMP/EIS. Through development of range improvement projects and changes in livestock grazing management, range conditions are expected to improve.

Under the No Action Alternative, elk populations would be allowed to expand naturally through pioneering outside the Pilot and Jarbidge Mountain Management Areas and/or immigration into the resource area to the extent such use is not preventing attainment of existing multiple use objectives identified in the Wells RMP/EIS, including maintaining or improving range conditions. However, no population goals or habitat management objectives for elk would be established for areas other than Pilot and Jarbidge Mountains.

The BLM would continue to monitor and evaluate attainment or non-attainment of identified multiple use objectives in the WRA. If elk use was determined to be preventing attainment of these objectives, a recommendation would be made to the NDOW to reduce or eliminate elk numbers within specific areas.

Rangeland monitoring conducted by the BLM has shown that under the current population levels and distributions, use by elk outside the Pilot and Jarbidge Mountain Management Areas is not preventing attainment of existing multiple use objectives for public lands within the WRA. However, it is difficult to predict how fast and to what level elk populations are expected to expand under this alternative. It is also difficult to predict at what population level elk may begin to prevent attainment of these objectives.

Management of any naturally established population would be the responsibility of the NDOW and the Nevada Wildlife Commission. The NDOW's elk population management goals and objectives would be influenced by the following factors: 1) recommendations from the BLM as a result of monitoring; 2) increased levels of private land depredation complaints; and 3) evaluation of public input by the Nevada Wildlife Commission as part of the normal process of setting seasons and harvests for game species in Nevada. A discussion of the NDOW's elk population management strategies can be found in Appendix E.

Existing Grazing Uses

Under the No Action Alternative, impacts to existing grazing uses would remain the same as identified in the Wells RMP/EIS and Wells RMP Approved Wild Horse Amendment; i.e. livestock grazing use could increase from the three to five year average use levels and initial herd sizes for wild horses within the WRA would be 871 horses. Adjustments in livestock grazing use and wild horse initial herd sizes would be based on monitoring.

The BLM would monitor the rangeland resource and make necessary adjustments in existing grazing management and/or uses to achieve multiple use objectives. Where elk management objectives do not exist (all areas except the Jarbidge and Pilot Mountain Management Areas), priority would be given to existing grazing uses identified in the land use plan when adjustments are determined necessary.

Under the No Action Alternative, there would be no management objectives established and no elk habitat improvement projects developed outside the Pilot and Jarbidge Mountain areas. Elk habitat improvement projects could provide for limiting factors and ensure the most efficient use of available forage and habitat by elk not currently available or utilized by existing grazing uses due to terrain and/or water availability. Because no such projects would be developed, mitigation of any potential conflicts between elk and existing grazing uses or attainment of existing multiple use objectives would be through BLM recommendations to the NDOW to reduce or eliminate elk numbers within specific areas.

Under the No Action Alternative, pioneering elk are not expected to impact existing fences in the short term when populations are small and dispersed. At current population levels, no known impacts from elk to fences located on public lands have occurred. Impacts to fences could begin to occur as elk populations expand. These impacts are expected to be minimal and would occur in isolated areas where seasonal movements and traditional trails are established. Damage to fences would be mitigated on a site specific basis through big game fence modification projects proposed in the Wells RMP/EIS.

Water

Water availability on public land has been determined to be a limiting factor within some potential elk habitats. As elk numbers increase consistent with existing resource values and uses, the demand for available waters could increase. Any increased demand for available waters would not be mitigated under this alternative. Elk habitat improvement projects would not be implemented outside the Pilot and Jarbidge Mountain Management Areas to mitigate increased demands on existing resource values or to allow for more beneficial use of available habitat, including use of forage currently unavailable to livestock and/or wild horses due to terrain and/or water availability. Water developments would be limited to those currently listed as management actions in the Wells RMP for terrestrial big game habitat improvement.

Riparian Habitat

As elk numbers increase consistent with existing resource values and uses, impacts to riparian habitat are expected to be minimal and would remain the same as identified in the Wells RMP/EIS as outlined below:

1. About 95 miles of protected stream (in addition to those miles protected without action) and 2518 acres of streamside riparian habitat would be maintained in good or better condition.

2. Unprotected aquatic and streamside riparian habitat would continue to decline in overall quality.

3. Terrestrial riparian habitat would generally be improved through protection of 250 springs and improved management. About 75% of those habitats in good, fair, or poor condition would improve by one condition class. About 15% of those acres in fair or better condition would remain static and about 10% of those in fair or better would decline by one condition class.

Other Resource Constraints

Under this alternative, impacts to construction or development activities (e.g. mineral, oil and gas, and geothermal exploration or development) would remain the same as outlined in the Wells RMP/EIS. Time-of-day and/or time-of-year restrictions would slow development activities where critical wildlife habitats exist. For more information of the impacts to construction or developments activities, please refer to Chapter 4 (Environmental Consequences) of the Wells RMP/EIS.

Standard operating procedures applicable to management of existing uses would remain the same as outlined in the Wells RMP/EIS Decision Record, i.e. time-of-day and/or time-of-year restrictions would not be placed on construction or development activities to mitigate impacts to elk where elk management objectives do not exist (areas outside Pilot and Jarbidge Mountain).

Private Land Resources

Based on experience with existing elk numbers in the WRA, conflicts with private lands are expected to be low during the short term because elk populations are small and widely dispersed. As elk populations continue to expand, increased depredation of

private land resources could occur. However, it is difficult to predict accurately to what extent private land resources may be impacted. Compensation for damage to private land resources would be the responsibility of the NDOW. The NDOW would respond to complaints as authorized by state law or Nevada Wildlife Commission policy and/or regulation. A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

Existing elk numbers have resulted in some cases of depredation of private land resources. As provided for under existing state legislation (see Appendix E), the NDOW has been successful in responding to all active elk depredation complaints throughout the state, providing monetary compensation for damage or fencing both stored and standing crops. In addition, the NDOW has successfully implemented emergency depredation hunts to alleviate elk depredation problems.

It is expected that elk would follow the snow melt in the spring and use forage on public and private rangelands at higher elevations. South and west facing slopes would normally be free of snow and available to elk during this time. However, as elk populations increase, spring elk use of irrigated meadows adjacent to wintering areas could occur. If depredation occurs during spring, impacts to alfalfa fields would be of most concern, primarily as a result of physical damage to soils and/or vegetation from trampling. Grass hay meadows are less susceptible to elk use because fields green-up later in the year and are less vulnerable to trampling.

Depredation of irrigated meadows during springtime is sometimes difficult to resolve. Hazing would have limited success in resolving spring depredation where suitable habitat with cover is adjacent to fields. Emergency hunts designed to remove depredating animals would resolve most problems, particularly where only a few elk are involved.

During severe snow conditions elk may move off public and private rangelands and onto private agricultural lands. If this occurs, depredation of stored hay is possible. Under existing legislation, the NDOW is able to provide wooden panels and wire exclosures which would effectively mitigate depredation in areas where ranchers regularly maintain panels. However, where stored hay is inaccessible and panels are not maintained, consumption and wasting by elk could occur. Technical assistance provided by NDOW could reduce some of the impacts where stored hay could be moved to less vulnerable locations away from expected elk use. In some cases, moving stored hay may not be possible or may result in increased operating costs to the private landowner. Technical assistance in the use of panels and wire exclosures may reduce impacts. Although panels and materials for wire exclosures could be provided by the NDOW, ranchers would still be required to erect panels or construct exclosures around stored hay. This would result in increased operating costs.

Appendices C and D describe the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775. At a population level of 775, the NDOW would issue 30 elk tags annually. As the number of elk tags applications increases, so does the available funding to address depredation complaints (assuming a certain amount of elk tag application fees continues to go toward funding depredation complaints).

Recreation

Under the No Action Alternative, impacts to recreation would remain the same as identified in the Wells RMP/EIS. Generally, available recreation opportunities would be enhanced through improvement of stream/riparian corridors, big game, and upland game habitats. Improvement of these wildlife habitats is expected to improve both consumptive and non-consumptive recreational opportunities in the WRA.

Visual Resources

Under the No Action Alternative, impacts to visual resources would remain the same as identified in the Wells RMP/EIS. The impacts of authorized resource activities within the WRA to visual resources would be addressed on a case by case basis to ensure compliance with BLM regulation and policy.

Socio/Economics

No definitive economic impacts, either beneficial or adverse, may be inferred to result from implementation of the No Action Alternative since elk numbers would exist only in harmony with existing multiple use objectives. Elk hunting expenditures, and the non-consumptive wildlife-associated recreation expenditures attendant to them, would most likely continue to be of minor importance in the local economy. They should remain at about the level discussed in Section IV, Affected Environment, fluctuating in a manner consistent with the number of elk hunting tags issued.

Under the No Action Alternative, any occasional conflicts between elk and livestock grazing should be minor and of no particular economic consequence. The BLM's monitoring and the NDOW's herd management practices should serve to identify and alleviate any potential problems.

Wilderness

Under the No Action Alternative, impacts to wilderness would be the same as identified in the Wells RMP/EIS. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation would be preserved on 145,287 acres designated as Wilderness Study Areas preliminarily suitable for wilderness designation.

Endangered, Threatened, or Candidate Species

Although the Wells Resource Area provides habitat for various endangered, threatened, or candidate animal and plant species, the habitat needs or locations of many of these species do not conflict or are compatible with elk use as proposed under this alternative. Therefore, increased elk numbers within the resource area as proposed under this alternative would not affect those endangered, threatened, or candidate species which potentially occur within the Wells Resource Area and are listed in Section III of this document (Affected Environment) with the exception of the following candidate plant species which may potentially exist in meadow or riparian habitats:

Sulphur Springs buckwheat (Eriogonum argophyllum)
Meadow pussytoes (Antennaria arcuata)
Robbins milkvetch (Astragalus robbinsii var. occidentalis)

The Sulphur Springs buckwheat is known to be associated with hot springs habitats in Ruby Valley. Meadow pussytoes are known to occur in meadows at 5,200 to 6,400 feet elevation. Robbins milkvetch occurs on stream banks in association with aspen and willows, usually at 6,900 to 10,000 feet elevation. Although most of the Nevada records for Meadow pussytoes and Robbins milkvetch occur on lands under management of the adjacent Humboldt National Forest, there is the potential to locate either taxa in the Wells Resource Area.

Under this alternative, increased elk numbers within the resource area is expected to result in increased impacts to terrestrial riparian habitats. However, these impacts are expected to be minimal. Based on limited survey information, it is difficult to predict what the potential impacts to these candidate plant species might be. Future surveys associated with monitoring to determine attainment or non-attainment of riparian management objectives and project development will provide necessary data to allow for future protection and long-term conservation of these rare plant taxa.

Limited Growth Alternative (1,000 elk):

GENERAL

Under this alternative, elk habitat management objectives would be established for six management areas within the WRA to support a target population level of 1,000 elk (plus or minus 10 percent); 800 north of I-80 and 200 south of I-80 (Table 2).

Appendix C (Figure C-1 and Table C-1) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a population of 1,000 elk north of I-80 (800 within the WRA plus 200 within the Utah portion of Pilot Mountain) would be achieved in approximately 2-3 years.

It is difficult to predict at what rate elk populations would increase south of I-80. It is expected that elk would pioneer available habitats south of I-80 as populations expand elsewhere in the resource area. Small periodic increases in elk populations would also occur as a result of approved augmentation and/or reestablishment efforts as outlined in the management determinations for this alternative. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. The target population of 200 elk within the WRA south of I-80 would be achieved within the first 2-3 years following establishment of a base population of 150 animals.

To maintain a target population level of 1,000 elk (plus or minus 10 percent) within the WRA under this alternative, it is estimated that the annual harvest would increase from approximately 30 (20 bull tags, 10 cow tags) to approximately 40 (20 bull tags, 20 cow tags).

WILDLIFE

Elk may directly compete with other native wildlife species, particularly mule deer and bighorn sheep, for available habitat. Like bighorn sheep, elk are primarily grazers. However, elk forage preferences change seasonally and may compete directly with

mule deer for browse species. Although the potential exists for competition between elk and bighorn sheep, it is unlikely since elk numbers would be more dispersed and bighorn sheep populations are smaller and more localized, utilizing habitat associated with steep rocky sideslopes. Although it is difficult to predict what elk seasonal use patterns might be and where habitat conflicts may occur, the potential exists for direct competition between elk and mule deer for browse species on existing mule deer winter ranges. At the population levels identified under this alternative, competition between mule deer and elk is expected to be minimal. As per the management determination for this alternative, management priorities would be given to mule deer if monitoring data indicate elk use is causing habitat degradation to mule deer habitat. The BLM would mitigate conflicts by making recommendations to the NDOW to reduce elk numbers as supported by monitoring.

Range Conditions and Available Forage

Under this alternative, elk use is not expected to affect existing range or habitat conditions or prevent attainment of management objectives. Monitoring would determine any necessary adjustments in target elk population levels.

Existing Grazing Uses

The Wells RMP did not allocate forage for existing grazing uses, but rather identified monitoring would be used to adjust grazing uses (livestock, wild horses, and wildlife) if it was determined that the existing authorizations were not meeting the land use plan objectives. Current monitoring data indicate elk are not preventing attainment of existing multiple use objectives at present population levels; e.g. conflicts with existing grazing uses are minimal. Monitoring and allotment evaluations completed to date have determined that current elk population levels are resulting in minimal conflicts with existing livestock uses on public lands. Although some overlap of use areas exists, the majority of use by elk is currently being made within areas not grazed by livestock due to suitability criteria such as steep terrain and lack of water. Elk appear to select these areas for their forage and cover values. As elk numbers increase, the area of overlapping use and potential conflicts is expected to increase.

An analysis of available data indicates the WRA could support an elk population of between 1,125-2,789 without conflicting with existing grazing uses (Appendix D). Based on this analysis, elk populations under this alternative would be below the range of numbers determined supportable by forage currently unavailable to livestock and wild horses. As elk numbers increase, the potential exists for competition with existing grazing uses for available forage. However, under this alternative, competition is expected to be minimal.

Elk use patterns and levels of use are expected to continue to be dispersed without competition for available livestock forage. At this population level, it is expected that elk would continue to make use of forage unavailable to livestock due to suitability factors such as terrain and/or water availability. Elk habitat improvement projects identified in the management determinations for this alternative such as water developments (i.e. guzzlers) to supplement existing waters would be effective in providing for elk to make more use of available habitat not currently grazed by livestock, thus minimizing conflicts. Elk habitat enhancement projects would be developed to increase elk use within rangelands unavailable for use by livestock due to terrain and/or water availability.

As elk populations increase, the potential for fence damage would also increase. Management determinations identified under this alternative would mitigate fence damage through fence modifications and/or construction of low maintenance elk pass structures. Under this alternative, impacts to fences are expected to be minimal. It is anticipated that approximately 30 miles of fence modification would be necessary to resolve potential fence damage conflicts.

Water

As elk numbers increase, the demand for available waters is expected to increase. However, conflicts are expected to be minimal. Increased demand for available waters would be mitigated through development of supplemental water facilities for elk within elk habitat management areas away from existing grazing use areas.

Riparian Habitat

As elk numbers increase, the potential exists for increased impacts to terrestrial riparian habitats, particularly springs and/or seeps and associated wet meadow areas which could be utilized by elk for wallows. Impacts could also occur to spring developments and associated protection fences as a result of concentrated use. Use of terrestrial riparian habitats by elk would vary depending on season of use and elk population densities. However, it is expected that elk impacts to terrestrial riparian habitats would be minimal. Proposed fence modifications within areas of high seasonal use would be effective in mitigating any conflicts with existing spring exclosure fences.

Adjustments in existing livestock grazing management within the resource area have been made in order to attain management objectives for the improvement of stream riparian habitat conditions. Increased use of stream riparian habitats by elk could slow attainment of these management objectives. However, experience in similar habitat types within the Great Basin has shown impacts to stream riparian habitats by elk populations managed through harvest strategies to be minimal or non-existent. Under this alternative, it is expected that impacts to stream riparian management would be minimal due to the nomadic nature of elk and the unlikelihood of elk making concentrated use in these habitat types. Monitoring would identify conflicts and needed adjustments in elk management to ensure attainment of stream riparian management objectives.

Other Resource Constraints

The impacts of other resource management activities on elk habitat would be analyzed for those areas where elk management objectives are established. For example, an impact assessment for construction or development activities could result in time-of-day and/or time-of-year restrictions to mitigate impacts to critical elk habitat.

Private Land Resources

The impacts of elk use to adjacent private land resources would be much the same as discussed under the No Action Alternative. As elk numbers increase, depredation of private land resources is expected to increase. Compensation for damage to private land resources would be the responsibility of the NDOW as discussed under the No Action Alternative. Based on existing legislative funding authorities, increased demand for elk hunting opportunities would increase available funding for addressing depredation complaints.

Recreation

Increased recreational use within the resource area associated with increased elk population levels would increase on and/or off-road vehicle traffic, causing minor increases in fugitive dust levels and potential increases in road maintenance needs. Increased off-road traffic would cause degradation of watershed values, increasing erosion potentials. Increased recreational use within the resource area could also increase chances for gates to be left open and vandalism to range improvements. All of these impacts are expected to be minimal.

Visual Resources

Low level impacts to visual resources would be associated with construction of 15 supplemental water developments within elk habitats. Visual impacts would be addressed on a case by case basis under a site specific environmental analysis.

Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. Under this alternative, proposed elk population levels are expected to be achieved within the first two years, at which time the hunting tags for elk would be increased to approximately 40, and continue at about that level on an annual basis, with adjustments as necessary, to maintain target population levels.

These 40 tags would provide an estimated 280 hunter days, and 356 non-consumptive wildlife-associated recreation days, annually. Total expenditures are estimated at $28,750 (1993 dollars), producing about $8,510 in local area income, and about 0.5 full time equivalent (FTE) jobs (1000 hours). Willingness-to-pay values, the value, or worth, of the experience to the hunter and the recreationist, are estimated at $34,800.

The State's annual revenue from application fees, assuming 5 percent of the tags issued would be made available to non-residents, should rise to about $6,180 (assuming 2 of the 40 tags issued being available to non-residents).

Under this alternative any occasional conflicts of elk with livestock grazing are expected to be minor and of no particular economic consequence; i.e. no adverse economic effects can be anticipated. Compensation for any depredation that might occur on private property is available to ranch operators, as discussed under the No Action Alternative.

Wilderness

As elk populations in the WRA increase, elk could begin to pioneer into and occupy suitable habitats located within designated WSAs. However, it is difficult to predict at what rate elk would pioneer suitable habitats within designated WSAs. Augmentations and/or reestablishment efforts would not occur within ten miles of WSA boundaries and habitat improvements to enhance elk populations or habitat suitability would not be allowed within designated WSAs. Therefore, the establishment of elk populations within designated WSAs is expected to be based on natural distributions and the natural processes which allow wildlife species to establish a natural balance with their habitat. The presence of elk within designated WSAs is expected to enhance wilderness values and a visitor's wilderness experience.

Increased elk populations could increase consumptive and non-consumptive recreational use within designated WSAs. An increase in the number of visitations to WSAs, particularly in the fall, could increase instances of cross country travel with motor vehicles and semi-developed camping sites along boundary roads, negatively impacting potential wilderness values. Impacts to wilderness values by increased consumptive and non-consumptive recreational use is expected to be minimal.

ENDANGERED, THREATENED, OR CANDIDATE SPECIES

The impacts to endangered, threatened, or candidate species would be the same as discussed under the No Action Alternative.

Moderate Density Alternative (3,500 elk):

GENERAL

Under this alternative, elk management objectives would be established for six management areas within the WRA, to support a target population level of 3,500 elk (plus or minus 10 percent). This total resource area target population level would include 2,570 (plus or minus 10 percent) north of I-80 and 930 (plus or minus 10 percent) south of I-80.

Current populations north of I-80 are estimated between 390-575 (Table 2). Because augmentation and/or reestablishment efforts could be allowed, it is difficult to predict how fast target levels would be achieved. Appendix C (Figure C-1 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 2,570 elk (plus or minus 10 percent) would be achieved within about 9-10 years.

To maintain the target population level under this alternative north of I-80, a maintenance harvest strategy would have to begin 3-4 years prior to achievement of target levels. The number of animals harvested would be increased from approximately 65 (50 bull tags, 15 cow tags) to approximately 80 (50 bull tags, 30 cow tags).

As elk populations increase elsewhere in the resource area, elk are expected to expand into available habitats south of I-80. Small periodic increases in elk populations would occur as a result of approved augmentation and/or reestablishment efforts as outlined in the management determinations for this alternative. Therefore, it is difficult to predict at what rate elk populations south of I-80 would increase. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 930 elk (plus or minus 10 percent) would be achieved within about 16-17 years.

To maintain the target population level under this alternative south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 25 (15 bull tags, 10 cow tags) to approximately 35 (15 bull tags, 20 cow tags).

Wildlife

As elk numbers increase under this alternative, the potential for competition between elk and other native wildlife species for available habitat is also expected to increase. Minimal competition between elk and bighorn sheep is expected due to differences in habitat preferences and low population densities as discussed under the Proposed Plan. Under this alternative, use of crucial deer winter ranges by elk and the potential for direct competition for available browse forage would be greater than for the Proposed Plan. Conflicts would be identified through monitoring with priority for management given to mule deer.

Range Conditions and Available Forage

Under this alternative, elk are expected to make increased use of available habitat as elk densities become less dispersed. However, impacts to range conditions are expected to remain low. The potential for degradation of range conditions would be greatest in areas of concentrated elk use as described under the Proposed Plan. Monitoring of rangeland conditions within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

Existing Grazing Uses

Elk populations under this alternative would be slightly above that range identified as supportable by forage currently unavailable to existing grazing uses (livestock and wild horses). The elk population range supportable by forage currently unavailable to existing grazing uses is presented in Appendix D. Under this alternative, the level of competition for available forage between elk and existing grazing uses is expected to be somewhat higher than for the Proposed Plan. The degree of conflict between existing grazing uses would be identified through monitoring. Elk habitat enhancement projects would help maximize use of available habitat while minimizing the potential for direct competition with existing grazing uses. However, under this alternative, it is expected that elk habitat improvement projects would begin to lose effectiveness in mitigating conflicts with existing grazing uses.

The potential for increased fence damage associated with increased elk populations and would be the same as discussed under the Proposed Plan. Approximately 55 miles of fence modification would be required to mitigate conflicts under this alternative.

Water

Under this alternative, the demand for available waters and the level of conflict would be greater than the Proposed Plan. Increased demand for available waters associated with increased elk use would be mitigated as discussed under the Limited Growth Alternative. However, as elk populations begin to make increased use of available habitats, the effectiveness of supplemental water developments for elk to mitigate increased demand of available waters is expected to decline.

Riparian Habitat

Impacts to terrestrial riparian habitats (i.e. developed and undeveloped springs, seeps, and wet meadows) would be much the same as described under the Limited Growth Alternative.

As elk numbers increase under this alternative, impacts to stream riparian habitat by elk and/or the effects of elk use on attainment of stream riparian management objects are expected to remain minimal as discussed under the Limited Growth Alternative.

Other Resource Constraints

Management constraints on other resource management activities would be the same as described under the Limited Growth Alternative.

Private Land Resources

It is impossible to predict accurately whether depredation of private land resources would occur and to what extent. However, as elk numbers increase, the potential for depredation of private land resources is expected to increase. The potential for conflicts with adjacent private land resources would be the same or slightly greater than for the Proposed Plan. Conflicts would be mitigated as discussed under the No Action Alternative.

Recreation

The impacts associated with increased recreational use would be the same as discussed under the Limited Growth Alternative. The potential for impacts associated with recreational use would increase as consumptive and non-consumptive opportunities increased. The level of impacts would be the same as for the Proposed Plan.

Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level impacts to visual resources could occur resulting from construction of 35 water developments within elk habitats and 3,500 acres of vegetation manipulation projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. This alternative would yield a sustained annual level of approximately 115 tags in 13 years, subject to adjustments for herd size management. Hunter days associated with this number of tags are estimated at 805, and non-consumptive wildlife-associated recreation days are estimated at 1,022.

This level of hunting and recreation activity would produce annual expenditures estimated at $82,500, resulting in 1.4 FTE jobs (2,800 hours), and an estimated direct income in the local area of $24,450. Willingness-to-pay values are estimated at $107,800; and revenues to the state from application fees are expected to be $17,900.

Depredation of private land resources by elk is expected to occur as elk populations increase. Existing state legislation allows for such losses to be fully compensable enabling the NDOW to respond to and/or compensate for depredation damage by elk.

A discussion of the management strategies available to the NDOW to address depredation of private land resources can be found in Appendix E.

It is also anticipated that some competition with livestock grazing on public lands could result under this alternative as elk populations begin to make increased use of available habitat. Monitoring and the application of mitigation efforts would intensify, but at this elk population level proposed mitigation is expected to lose effectiveness. The potential economic effect on ranch operations cannot be estimated, because potential conflicts with livestock grazing is indeterminate.

WILDERNESS

The impacts to wilderness values would be the same as discussed under the Proposed Plan.

ENDANGERED, THREATENED, OR CANDIDATE SPECIES

The impacts to endangered, threatened, or candidate species would be the same as discussed under the No Action Alternative.

High Density Alternative (4,800 elk):

GENERAL

Under this alternative, elk management objectives would be established for six management areas within the WRA, to support a target population level of 4,800 elk (plus or minus 10 percent). This total resource area target population level would include 3,490 (plus or minus 10 percent) north of I-80 and 1,310 (plus or minus 10 percent) south of I-80.

Current populations north of I-80 are estimated between 390-575 (Table 2). Because augmentation and/or reestablishment efforts could be allowed, it is difficult to predict how fast target levels would be achieved. Appendix C (Figure C-1 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur under a limited hunting/harvest regime beginning with a population of 775 north of I-80. Based on this population growth model, a target level of 3,490 elk (plus or minus 10 percent) would be achieved within about 13-14 years.

To maintain the target population level under this alternative north of I-80, a maintenance harvest strategy would have to begin 3-4 years prior to achievement of target levels. The number of animals harvested would be increased from approximately 90 (70 bull tags, 20 cow tags) to approximately 110 (70 bull tags, 40 cow tags).

As elk populations increase elsewhere in the resource area, elk are expected to expand into available habitats south of I-80. Small periodic increases in elk populations would occur as a result of approved augmentation and/or reestablishment efforts as outlined in the management determinations for this alternative. Therefore, it is difficult to predict at what rate elk populations south of I-80 would increase. Appendix C (Figure C-2 and Table C-2) describes the expected elk population growth and corresponding number of tags issued which would occur south of I-80 beginning with a population

of 150. Assuming an initial population of 150 elk managed under a limited growth harvest regime, a target level of 1,310 elk (plus or minus 10 percent) would be achieved within about 20-21 years. To maintain the target population level under this alternative south of I-80, a maintenance harvest strategy would begin 3-4 years prior to achievement of target level. The number of animals harvested would be increased from approximately 35 (25 bull tags, 10 cow tags) to approximately 45 (25 bull tags, 20 cow tags).

Wildlife

As elk numbers increase under this alternative, the potential for competition between elk and other native wildlife species for available habitat is also expected to increase. Conflicts between elk and bighorn sheep are expected to remain the same as discussed under the Proposed Plan. Until elk seasonal use patterns are established, it is difficult to predict what level of conflicts might occur between elk and mule deer on crucial deer winter ranges. However, under this alternative, it is estimated use of crucial deer winter ranges by elk and the potential for direct competition for available browse forage would be at a greater level than estimated for the Proposed Plan and the Moderate Density Alternative. Conflicts would be identified through monitoring with priority for management given to mule deer.

Range Conditions and Available Forage

As elk populations increase and elk habitat improvements are developed, elk densities are expected to be less dispersed with seasonal use areas well established. A reduction in range condition due to elk use could occur in areas of concentrated elk use, particularly ridgelines and southern aspects where concentrated winter and spring elk use would occur. However, impacts to range conditions are expected to remain similar to those identified under the Moderate Density Alternative. Monitoring of rangeland conditions within elk use areas would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

Existing Grazing Uses

Elk populations under this alternative would be above that range identified as supportable by forage currently unavailable to existing grazing uses (livestock and wild horses). The elk population range supportable by forage currently unavailable to existing grazing uses is presented in Appendix D. However, considering the indeterminate factors and the conservative assumptions utilized in this data analysis, it is difficult to predict at what elk population level conflicts with existing uses would occur. However, as elk numbers increase under this alternative, making increased use of available habitat and habitat improvements achieve less effectiveness in mitigating conflicts, competition between elk and existing grazing uses is expected to increase. Conflicts are expected to be greater than for the Moderate Density Alternative. Under this alternative, habitat improvements are projected to achieve moderate success in minimizing the potential for direct competition with existing grazing uses. Conflicts between elk and existing grazing uses would be quantified through monitoring and serve as the basis for recommending necessary adjustments in target population levels.

The potential for increased fence damage associated with increased elk populations would be mitigated as discussed under the Proposed Plan. Approximately 55 miles of fence modification would be required to mitigate conflicts under this alternative (same as for the Moderate Density Alternative).

Water

Increased demand for available waters associated with increased elk use would be mitigated as discussed under the Limited Growth Alternative. Under this population level, mitigation measures such as supplemental water development and vegetation manipulations to promote increased use of available habitat by elk would achieve moderate success.

Riparian Habitat

Impact to terrestrial and stream riparian habitats would be much the same as discussed under the Limited Growth Alternative. Monitoring would quantify impacts and serve as the basis for recommending adjustments in local elk population levels.

Other Resource Constraints

Management constraints on other resource management activities would be the same as described under the Limited Growth Alternative.

Private Land Resources

As elk populations increase under this alternative, it is impossible to predict accurately whether depredation of private land resources would occur and to what extent. However, as elk numbers increase, the potential for depredation of private land resources is expected to increase. Conflicts with adjacent private land resources would be mitigated as discussed under the No Action Alternative.

Recreation

The impacts associated with increased recreational use would be the same as discussed under the Limited Growth Alternative. The potential for impacts associated with recreational use would increase as consumptive and non-consumptive opportunities increased. The level of impacts would be the same as for the Proposed Plan.

Visual Resources

Impacts to visual resources would be associated with development of elk habitat improvement projects. Low level visual impacts could occur as a result of construction of 45 supplemental water developments within elk habitats and 5,000 acres of vegetation manipulation projects. Mitigation of visual impacts would be addressed on a case by case basis under a site specific environmental assessment.

Socio/Economics

Consumptive and non-consumptive benefits associated with elk are expected to increase relative to overall elk numbers and the number of elk tags issued by the NDOW. At this population level, the number of tags issued for elk hunting would rise to approximately 155 in approximately 17 years. Hunter days would reach 1,085; and non-consumptive wildlife-associated recreation days are estimated to number 1,378. Total expenditures associated with hunting and recreation activity are estimated at

$111,200, producing direct income in the local area of $32,900, providing an estimated 1.9 FTE jobs (3,800 hours).

The worth of the recreation experience, for hunters and recreationists combined, is estimated at a willingness-to-pay value of $145,300. Revenues to the state for application fees are estimated at $24,100; assuming that only 5 percent of the elk tags would be issued to non-residents, and not projecting for any bid-tag sales.

Competition with livestock grazing for AUMs, potential depredation of private land resources, and the potential economic impact on individual ranch operations would be based on the level of conflict experienced. As populations levels increase, increased levels of conflict are expected with some adverse impact on individual ranch operations likely to occur. Most all economic losses would be compensable through existing legislation allowing the NDOW to respond to and/or compensate for depredation damage by elk. Monitoring would identify conflicts in management of public land resources and allow for mitigation through recommendations to the NDOW in reductions of elk herd sizes as necessary.

WILDERNESS

The impacts to wilderness values would be the same as discussed under the Proposed Plan.

ENDANGERED, THREATENED, OR CANDIDATE SPECIES

The impacts to endangered, threatened, or candidate species would be the same as discussed under the No Action Alternative.

Cumulative Impacts:

All resource values have been evaluated for cumulative impacts. It has been determined that cumulative impacts would be negligible as a result of alternatives presented in this environmental assessment.

Monitoring Needs:

The monitoring described for each alternative is sufficient for this action.

V. CONSULTATION AND COORDINATION

A. Persons, Groups, and Agencies Consulted:

The determination to process this amendment was made in April, 1993. A Notice of Intent to prepare an environmental assessment (EA) level amendment to the Wells RMP was published in the Federal Register on May 14, 1993. This notice also included a 45-day scoping period during which the public was requested to assist the BLM in identifying planning issues, planning criteria, and identifying alternatives they wish to be analyzed in the amendment. A letter to all interest groups, individuals, and agencies was sent on May 13, 1993. Two public scoping meetings were also held (June 1, 1993 in Twin Falls, Idaho and June 2, 1993 in Wells, NV) to receive public comments

on the scoping documents. A news release was prepared and sent to all newspapers in northern Nevada. In response, thirty five comment letters were received and oral comments were received from twenty two individuals. Written and oral comments expressed a wide range of concerns and views which are summarized under the heading "Public Attitudes" in Chapter III of this EA.

To facilitate a more efficient preparation of the plan amendment, a Task Force Group was formulated to assist the area manager in:

- formulating planning issues,
- identifying the scope of environmental analysis,
- developing a scoping document,
- reviewing public comments,
- identifying management alternatives to be considered,
- providing baseline information, and
- selecting a preferred alternative.

The Task Force Group is comprised of representatives from resource management agencies, land owners, special interest groups, and county government. The following is a list of Task Force Group members:

Robert Wright	Rancher/Land Owner
Steve Boies	Rancher/Land Owner
Don Campbell	Rancher/Land Owner
John Dits	Elko Chapter, Rocky Mountain Elk Foundation
Gilbert Hernandez	Elko County Advisory Board to Manage Wildlife
Carl Nellis	Idaho Dept. of Fish & Game, Region 4
Larry Barngrover	Nevada Division of Wildlife, Region 2
Boyd Spratling	Nevada Wildlife Commission
Jack Rensel	Utah Dept. of Wildlife, Northern Region
Waive Stager	U.S. Forest Service, Jarbidge Ranger District
Don Ohman	U.S. Forest Service, Twin Falls Ranger District
Gary Carson	BLM, Boise District, Jarbidge Resource Area
Tom Dyer	BLM, Burley District, Snake River Resource Area
Leon Berggren	BLM, Salt Lake District, Bear River Resource Area
Bill Baker	BLM, Elko District, Wells Resource Area
Von Sorensen	Elko Board of County Commissioners, Public Land Use Advisory Commission
Candice Wines	Elko Board of County Commissioners, Public Land Use Advisory Commission

B. Written Comments Received on the Draft Plan:

At the request of the Elko Board of County Commissioners, the initial 30-day public review period was extended an additional 90 days until December 2, 1994. A total of 209 comment letters and 317 signatures were received on the draft document during the combined public review periods. Each comment letter received was carefully reviewed and all substantive comments which addressed inadequacies or inaccuracies in the facts or analysis or methodologies used; identified new impacts or recommended reasonable new alternatives or mitigation measures; or involved substantive disagreements or interpretations of significance relating to the issues discussed in the Draft Plan Amendment, have been evaluated and responded to in Appendix F of this document. Because of the volume of comments received on the draft plan amendment, individual comment letters were not reprinted in their entirety, rather substantive comments of similar content were summarized. The actual comment letters are retained at the BLM Elko District Office as part of the record and are available for public review.

C. List of Preparers:

Ray Lister - BLM, Elko District Range Specialist
Kent Undlin - BLM, Wells Resource Area Wildlife Biologist
Paul Myers - BLM, Nevada State Office Economist

D. List of Reviewers:

Elk Plan Amendment Task Force Group
Bill Baker - BLM, Wells Resource Area Manager
David Vandenberg - BLM, Elko District Planning and Environmental Coordinator
Roy Price - BLM, Elko District Wildlife Biologist
Gary Back - BLM, Elko Resource Area Wildlife Biologist
Ken Wilkinson - BLM, Elko Resource Area Wildlife Biologist
Carol Evans - BLM, Elko Resource Area Fisheries Biologist
Neil Talbot - BLM, Nevada State Office Environmental Planner
Dave Pulliam - BLM, Nevada State Office Wildlife Program Leader
Leticia Gallegos - BLM, Wells Resource Area Range Conservationist
Brian Amme - BLM, Nevada State Office Environmental Protection Specialist
Brad Hines - BLM, Nevada State Office Rangeland Management Specialist

VI. FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Wells RMP Proposed Elk Amendment and Environmental Assessment. Based on the analysis of potential environmental impacts contained in this document, I have determined that the impacts are not expected to be significant and an environmental impact statement is not required.

Ann J. Morgan
State Director, Nevada

February 1, 1995

APPENDICES

Appendix A

Adjudication, land use planning, monitoring and their relation to existing livestock use within the Wells Resource Area.

Livestock grazing privileges were originally awarded in accordance with the Taylor Grazing Act of June 28, 1934. The establishment of grazing allotments and determining the number of livestock and wildlife that can be supported by the range resource for a particular allotment, unit, or area was first done through the Bureau's adjudication program in the 1960's. The Bureau's adjudication process involved: 1) the determination of base property qualifications by means of dependent property surveys; 2) the rating of the grazing capacity of the Federal range by means of forage inventories; 3) the rating of the production potential of the Federal range; and 4) the equitable apportionment of the Federal range among the competing applicants for use of the same range area. The range adjudication process and the equitable apportionment of the available forage among the competing applicants established the grazing preference for each qualified livestock operator as well as the area, season, and kind of livestock use.

Section 202 of the Federal Land Policy and Management Act of 1976 directed the BLM to complete Land Use Planning. Beginning in the late 1970's and continuing in the late 1980's the BLM in Nevada was in an intensive land use planning phase. The emphasis which began this effort was the court settlement (NRDC v. Morton), agreed to between the National Resource Defence Council, the BLM and Federal Court wherein, the BLM was to prepare 212 Environmental Impact Statements (EISs) to analyze the impacts of grazing domestic livestock on public lands. Early land use planning efforts contained, in part, the proposed action for the allocation of forage to livestock, wildlife, wild horses and burros which was analyzed in the EIS's. These proposed actions used "one point in time inventories" as a data base to determine the overall carrying capacity of the range and proposed various allocations of the capacity between varying uses. This policy became controversial and centered around the validity of using "one point in time inventories" as the main criteria for allocations. As a result of this controversy in 1982 the BLM Director issued a new policy (Instruction Memorandum 81-548) that required adequate monitoring data to be required in addition to data from "one point in time inventories" when changes in livestock grazing preferences were implemented.

As a result, Nevada's Resource Management Plans made the following types of decisions:

1. Livestock Grazing:
   - a. Identified objectives for vegetation goals.
   - b. Determined where livestock would and would not be allowed.
   - c. Identified the degree of range improvements.
   - d. Identified kind of livestock to be permitted by area.
   - e. Identified goals for authorized levels of livestock use.
   - f. Identified "initial levels" of authorized livestock grazing.
   - g. Identified that "monitoring" would be used to adjust livestock grazing if it was determined that the existing authorizations were not meeting the LUP objectives.

2. Wild Horse and Burros:
   - a. Identified Herd Management Areas.
   - b. Identified "initial levels" of Wild Horse and Burros.
   - c. Identified that "monitoring" would be used to adjust Wild Horse and Burro levels.

3. Wildlife:
   - a. Identified habitat objectives by kind and area or wildlife.
   - b. Identified "reasonable numbers" of wildlife by kind and area.
   - c. Identified aquatic habitat objectives.
   - d. Identified that "monitoring" would be used as the basis for recommending adjustments in wildlife population levels to the Nevada Department of Wildlife.

Appendix B
Management Determination and Impact Analysis Summary

Management Determinations					
Alternative	Alternative 1 (No Action)	Alternative 2 (Limited Growth)	Alternative 3 (Preferred Alternative)	Alternative 4 (Moderate Density)	Alternative 5 (High Density)
Target Population	400	900-1,100	1,980-2,420	3,150-3,850	4,320-5,280
Mgt. Areas	2	6	6	6	6
Elk Habitat Improvements	none	15 waters 30 mi fence	20 waters 45 mi fence 2,000 ac. burn	35 waters 55 mi fence 3,500 ac. burn	45 waters 55 mi fence 5,000 ac. burn

Impact Analysis for Each Alternative (Impact Rating/Mitigation Rating)					
Existing Big Game Habitats	0/1A	1/1A	2/1A	3/1A	3/1A
Vegetative Resources/ Range Conditions	0/1A	0/1A	2/1A	2/1A	2/1A
Existing Grazing Uses	0/1A	1/1A,1C	2/1A,1C	3/1A,2	3/1A,3
Fences	1/1C	1/1C	3/1C	3/1C	3/1C
Demand on Available Waters	1/0	1/1C	1/1C	3/2	3/3
Riparian Habitats	1/1A	1/1A	1/1A	1/1A	1/1A
Constraints on other Resource Activities	1/0	3/0	3/0	3/0	3/0
Conflicts with Private Land Resources	1/1B	1/1B	3/1B	3/1B	3/1B
Recreation	1/0	1/0	2/0	2/0	2/0
Visual	1/1A	1/1A	2/1A	2/1A	2/1A
Socio/Economics	+/0	+/0	+/0	+/0	+/0
Wilderness	0/0	1/0	2/0	2/0	2/0
T&E Species	1/1A	1/1A	1/1A	1/1A	1/1A

Impact Rating:

+	Positive benefits associated with increased consumptive and non-consumptive use.
0	No impacts.
1	Minimal impacts
2	Potential increased impacts expected; low level.
3	Conflicts are expected.

Mitigation Analysis:

0	No mitigation.
1A	Mitigation via rangeland monitoring/allotment evaluation to reduce numbers; mitigation via site specific EA.
1B	Mitigation - NDOW responsibility (depredation compensation).
1C	Mitigation via habitat improvements is effective.
2	Mitigation begins to lose effectiveness.
3	Mitigation results in moderate success.

Appendix C

Estimated Elk Population Growth Model

Introduction

In order to formulate an estimate of how fast elk populations in the Wells Resource Area (WRA) could be expected to increase, growth curves and tables were developed for populations north of I-80 (Figure C-1, Table C-1) and south of I-80 (Figure C-2, Table C-2) based on maximum response to a new environment. Existing elk populations within the WRA north of I-80 are estimated at 390-575. Approximately 150 elk also inhabit the Utah side of Pilot Mountain. Because the Pilot Mountain elk population is cooperatively managed by Utah and Nevada under similar harvest strategies, a base population of 775 (current WRA elk population estimate north of I-80 plus the current Pilot Mountain population for Utah) was used to estimate population growth north of I-80. Because established populations do not exist south of I-80 (only occasional sightings of elk have been recorded), a viable base population of 150 was used as a starting point from which to estimate population growth south of I-80.

Assumptions

In developing these population growth estimates, the assumption is made that mortalities are light and based on a limited hunting/harvest regime. Also, limited predator (animal and human) mortalities were used. Assumptions inherent to this population model are based on 25 years data on the Cache Forest in Utah. However, the assumptions utilized were slightly liberalized based on professional judgement as Nevada conditions dictate. The following assumptions were used for this analysis:

.90 male young survival (post-pre)[1]
.90 female young survival (post-pre)
.92 female adult survival (post-pre)
.95 yearling male survival (post-pre)
.95 male adult survival (post-pre)
.43 production (summer ratio)

[1] "post-pre" = from post hunting season to pre-hunting season the following year.

As population levels increase, it would be expected that the growth rate for the herd would decline or level off. However, for this analysis a constant growth rate has been depicted.

Harvest Strategies

When an elk population approaches an objective level, the harvest level needs to be adjusted upwards. Starting several years prior (4 or 5 years) to achievement of the object, the harvest levels (especially for females) need to be increased. Depending on how successful this strategy is at scaling down the growth curve, a harvest of approximately 25% of both the female and male recruitment (increment) would need to be achieved. There are many variables that influence the harvest level and tag quotas and the actual tag quota and harvest would vary from year to year and area to area. These variables include but are not limited to hunter success, number of hunters (congestion), hunters attitude, availability of animals, bull/cow ratios, weather, vegetation type, tree cover, topography, and the class of hunter that draws the tag.

Figure C-1
Estimated Elk Population Growth Curve - North I-80

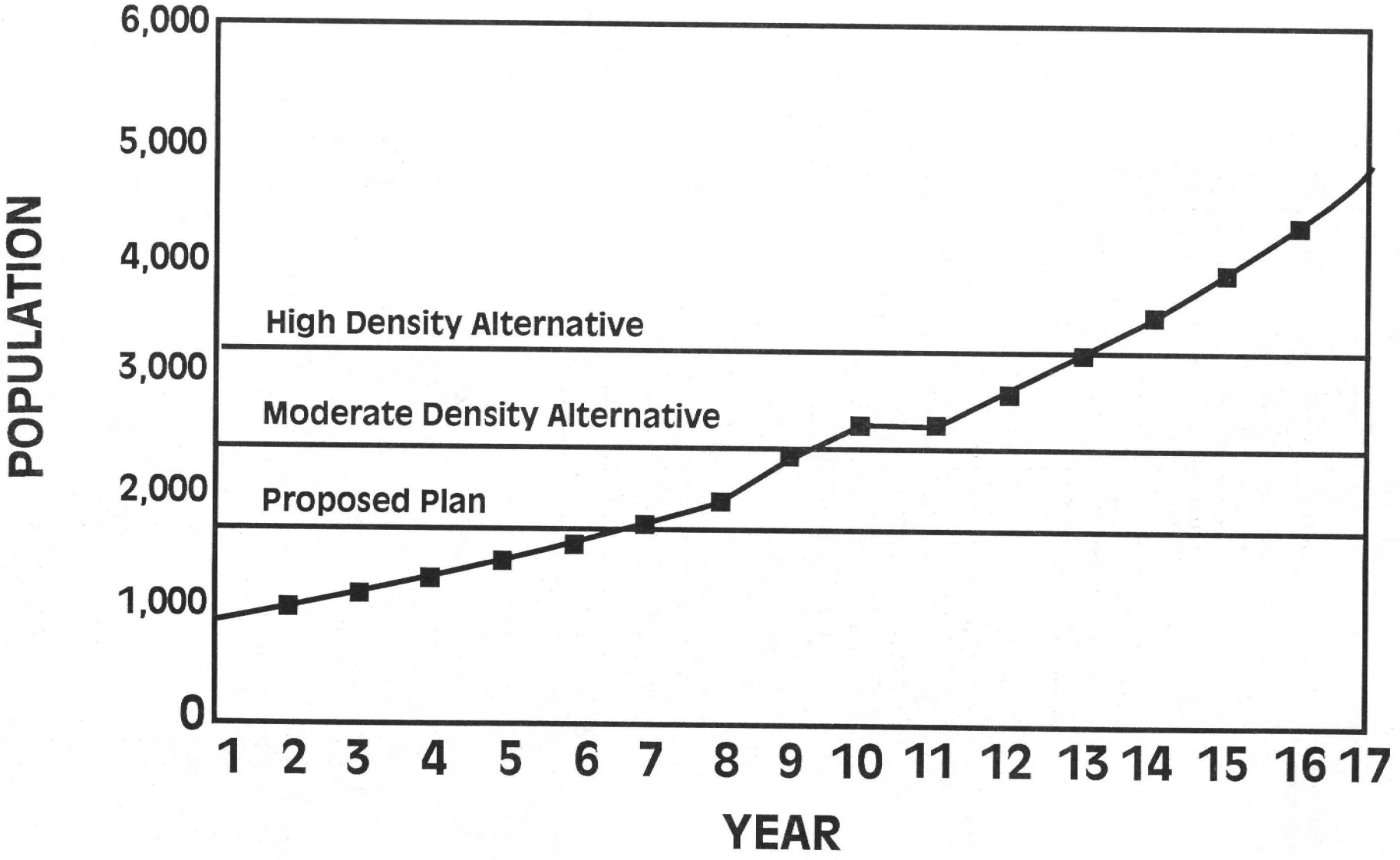

Table C-1

Estimated Elk Population Growth Table and Tags Issued North of I-80

YEAR	POPULATION	BULL TAGS	COW TAGS	TOTAL TAGS
1	775	20	10	30
2	899	25	10	35
3	1031	25	10	35
4	1179	35	15	50
5	1330	40	15	55
6	1494	50	15	65
7	1670	50	15	65
8	1870	55	20	75
9	2318	70	20	90
10	2583	70	20	90
11	2586	70	20	90
12	2875	75	25	100
13	3202	80	25	105
14	3562	90	25	115
15	3960	100	30	130
16	4403	110	30	140
17	4897	115	35	150
TOTAL		1080	340	1420

Figure C-2
Estimated Elk Population Growth Curve - South of 1-80

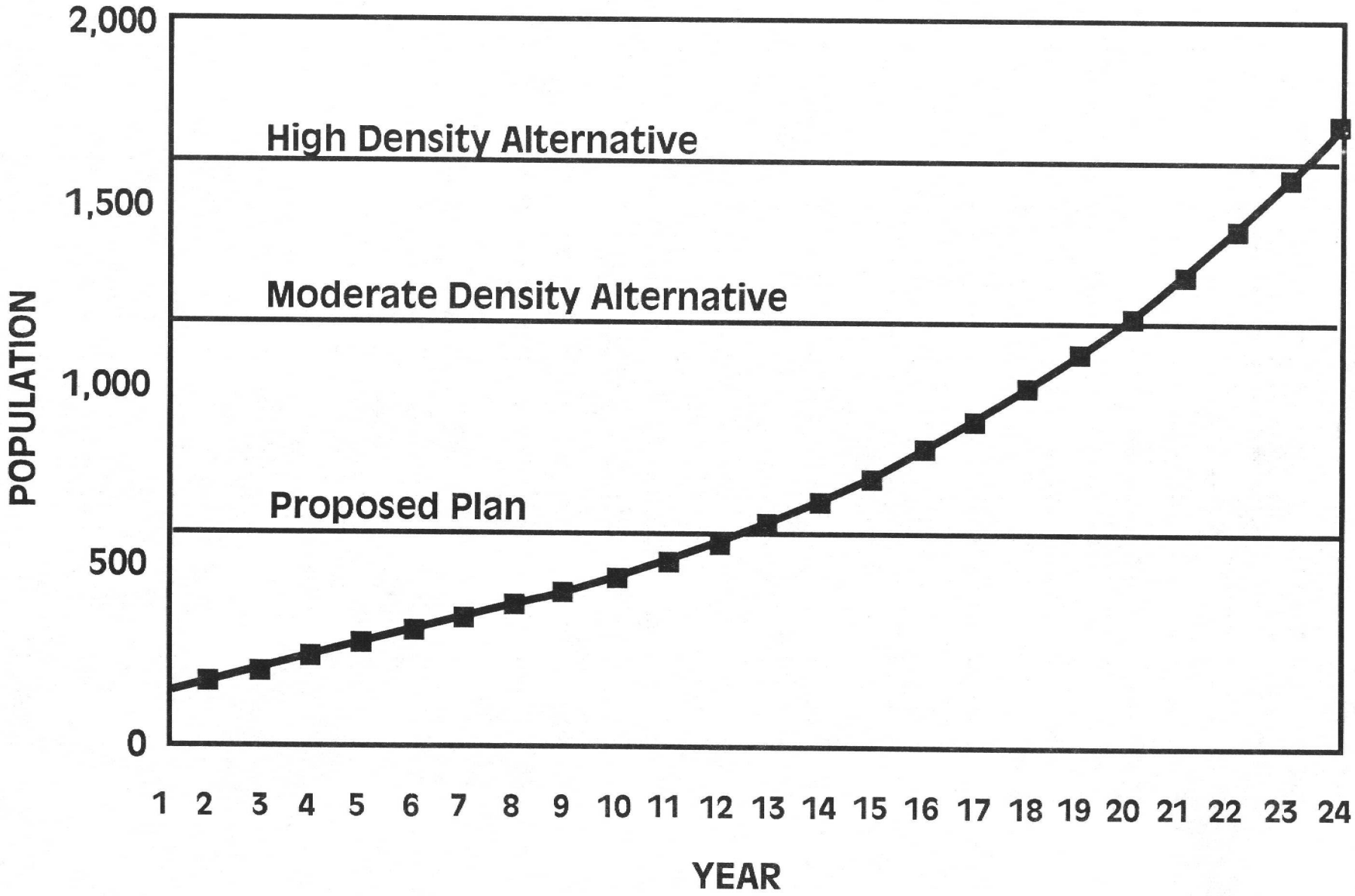

Table C-2

Estimated Elk Population Growth Table and Tags Issued South of I-80

YEAR	POPULATION	BULL TAGS	COW TAGS	TOTAL TAGS
1	150	0	0	0
2	181	0	0	0
3	216	0	0	0
4	254	0	0	0
5	291	5	0	5
6	329	5	5	10
7	370	5	5	10
8	410	10	5	15
9	445	15	10	25
10	486	15	10	25
11	531	15	10	25
12	582	15	10	25
13	639	15	10	25
14	703	15	10	25
15	770	20	10	30
16	847	20	10	30
17	934	20	10	30
18	1027	25	10	35
19	1133	25	10	35
20	1240	35	15	50
21	1361	35	15	50
22	1495	40	15	55
23	1637	50	15	65
24	1802	50	15	65
TOTAL		435	200	635

Appendix D

Elk Available Forage Analysis

Introduction

The planning criteria for this proposed RMP amendment states that monitoring will continue to be the basis for making adjustments in grazing use; e.g. this proposed plan amendment will not serve to allocate or adjudicate forage for specific grazing uses. The planning criteria established for this proposed plan amendment also states (Criteria #5), "...existing studies, the most current available inventories, current publications, and professional judgement will be used to determine potential impacts [of proposed alternatives] and to make sound management decisions".

Each grazing allotment within the resource area has been classified into a selective management category based on management needs, potential for improvement, and Bureau funding/manpower constraints. Selective management classifies allotments into three categories: "M" (Maintain), "I" (Improve), or "C" (Custodial). Forage utilization data is collected annually for all "I" and "M" category and most "C" category grazing allotments within the resource area. Utilization data is evaluated to determine if grazing management (livestock, wild horses, and wildlife) is meeting long term multiple use objectives and whether adjustments in the numbers of grazing animals are necessary. Livestock grazing use patterns are also mapped to further evaluate livestock utilization and distribution. Use pattern mapping data stratifies grazing allotments or pastures into utilization levels ranging from zero use to severe use. Analysis of this information, with qualifications and limitations, allows for determination of a range of potential elk numbers that could be supported within moderate to high potential habitats in relation to existing grazing uses by livestock and wild horses.

A summary of elk population ranges which could be supported within each proposed management area based on analysis of livestock and wild horse use pattern mapping data is outlined in Table D-1. This analysis does not represent an allocation or adjudication of forage. This analysis only utilizes currently available livestock utilization and distribution data to identify a range of elk numbers that could be supported by AUMs (an AUM is an animal unit month which is the amount of forage required to support a cow and calf or five sheep for one month) presently unavailable to livestock. This relationship between elk habitat potentials and existing livestock use is only used to assist in determining potential impacts associated with alternative elk target population levels presented in this proposed plan amendment. As stated in the planning criteria for this proposed plan amendment, monitoring data will be used as the basis for future adjustments in target elk population levels. Any conclusions or determinations of potential impacts of elk use based on this data summary must be tempered with the following:

- This analysis shows a range of elk numbers which could be supported based only on forage or habitat areas currently unavailable by livestock and/or wild horses. This makes an assumption of complete dietary overlap between elk and cattle which does not exist. Dietary overlap is a seasonal factor and would be less during fall and winter months. Therefore, elk could utilize winter range, for example, outside those areas shown as unavailable for livestock without conflict.

- This analysis only considers moderate to high potential elk habitat within each proposed management area. A much larger amount of low to moderate potential elk habitat exists within each proposed management area which are not included in this analysis.

- The public acres within the moderate to high potential elk habitat areas identified as unavailable to livestock are based on current livestock use pattern mapping data on file at the Elko District Office of the BLM. Livestock distributions could increase, reducing those acres and AUMs identified as unavailable to livestock, with development of rangeland improvement projects; particularly water developments.

- Summer range has been identified as the most limiting factor for seasonal elk habitat within the Wells Resource Area due to lack of water. Lack of water and other factors such as balances in seasonal habitats (i.e. summer and winter range) were considered when rating habitat potentials (low to moderate, moderate to high) for elk. Although only moderate to high potential habitat was included in this analysis of available elk forage, making the assumption that all acres unavailable or unsuitable to livestock are suitable for elk, some habitat limitations could exist within moderate to high potential habitats.

To compensate for the limitations inherent to the assumptions described above, the following conservative factors were utilized to determine (for analysis purposes) the range of elk numbers which could be supported within each proposed management area:

- Only public acres within moderate to high potential habitat areas were included. For the proposed Pilot Management Area, the analysis results show supportable elk numbers about fifty percent of current population management levels. This would indicate that elk populations in this management area are being supported by private lands without conflict. This situation could exist elsewhere in the resource area.

- Only those public acres stratified as zero use and ten percent of those acres stratified as slight use by livestock were included. The average forage use by livestock in the slight use zone is ten percent. Only including ten percent of these acres for use by elk allows for a very conservative potential elk density estimate, allowing for reduced conflict potentials with existing grazing uses.

- The AUMs calculated as unavailable to livestock are based on 11.4 acres/AUM. This is the overall average based on the total public land acres within the WRA and current active preference. Forage production within those areas unavailable to livestock would most likely be greater due to higher elevations, greater precipitation, and later seral stage conditions.

- In order to express available AUMs in terms of elk numbers, a conversion factor must be applied which expresses the forage requirements of elk relative to the requirement of an animal unit (one mature domestic cow of approximately 1,000 pounds, and her calf up to six-months of age, five sheep, or one horse). The Wells RMP utilized a conversion factor of 1.25 elk/AUM when expressing reasonable numbers of elk in terms of AUM forage requirements for analysis purposes. An AUM is the amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day (or about 800 pounds of dry forage per month). A conversion factor of 1.25 elk/AUM would equate to a consumptive rate of 21.3 lbs of forage/day/elk or 640 lbs/month/elk. Studies in Idaho, Wyoming, and Utah indicate daily consumptive rates are much lower, allowing for conversion factors higher than 1.25 elk/AUM. Anderson and Denton (1978) calculated a conversion factor of 3.1 elk/AUM when applying seasonal consumptive rates and winter age and sex class weights to a herd composition of very few bulls, 40 calves/100 cows and 50/50 sex ratio in calves and yearlings. A Nevada Technical Note developed by Rintamaki (1988) calculates elk forage consumptive rates at 3.1 pounds of forage/hundred weight/day. Considering a herd composition of 28% calves, 50% cows, and 22% bulls and an average herd weight of 403 pounds per animal, the conversion factor is determined to be 2.1 elk/AUM. The Utah Division of Wildlife Resources has published

Guidelines for Evaluating Annual Crop Losses Due to Depredating Big Game (1987) in which forage consumption by elk on typical range (ranges dominated by big sagebrush, pinyon-juniper, oak, maple, bitterbrush, etc.) adjacent to hay fields is determined to be 7.3 lbs of field dry alfalfa hay by mean sized elk in a common group structure per day. This would equate to 219 pounds per month or 3.653 elk/AUM.

Nelson (1982) describes the daily elk forage consumptive rate as variable and a function of the relative nutritional need and size and age of the animal, as well as the relative digestibility of the forage. Because of these variabilities, it was determined most appropriate to present a range of elk numbers supportable by AUMs determined unavailable to livestock. This range of elk numbers was calculated based on a low-range conversion factor of 1.25 elk/AUM (as used in the Wells RMP) and a high-range of 3.1 elk/AUM.

References

Anderson, L. D. and Denton, J. W., 1978. Base Data Analysis Required for Forage Allocation. Preliminary Draft, Bureau of Land Management Technical Note.

Nelson, Jack and Leege, Thomas A., 1982. Manuscript on Nutritional Requirements and Food Habits for Elk of North America.

Rintamaki, R.C., 1992. U.S. Department of Agriculture, Soil Conservation Service. Nevada Technical Notes. Estimating Forage Requirements for Game Species. Adapted from Wyoming Technical Note Biology No. 37, July, 1988.

Utah Division of Wildlife Resources Utah Department of Natural Resources, 1987. Guidelines for Evaluating Annual Crop Losses Due to Depredating Big Game. Publication No. 87-5.

Table D-1

Elk Available Forage Analysis

Management Area	Alternative Elk Population Levels	Acres of Mod-High Habitat	Total Mod-High Habitat % Public Land	Public Acres Unavailable to Livestock[1]	AUMs Unavailable to Livestock[2]	AUMs Wild Horse Use in Mod-High Habitat[3]	% Wild Horse Use Within Areas Unavailable to Livestock[4]	AUMs Wild Horse Use[5]	AUMs Available for Elk[6]	Elk Numbers Supportable by AUMs Unavailable to Livestock[7]
Jarbidge	Alt. 2 110 Alt. 3 220 Alt. 4 370 Alt. 5 515	95,660	97%	13,909	1,220	0	0	0	1,220	127-315
Snake Range	Alt. 2 40 Alt. 3 100 Alt. 4 170 Alt. 5 240	90,084	61%	6,675	586	0	0	0	586	61-151
Goose Creek	Alt. 2 400 Alt. 3 1070 Alt. 4 1780 Alt. 5 2485	612,285	80%	41,458	3,637	0	0	0	3,637	379-940
Pilot	Alt. 2 250 Alt. 3 250 Alt. 4 250 Alt. 5 250	32,654	49%	11,539	1,012	0	0	0	1,012	105-261[8]
Spruce/Pequops	Alt. 2 0 Alt. 3 340 Alt. 4 560 Alt. 5 790	147,959	99%	41,459	3,637	984	80%	787	2,850	297-736
Cherry Creeks	Alt. 2 0 Alt. 3 220 Alt. 4 370 Alt. 5 520	95,990	97%	26,809	2,352	900	95%	855	1,497	156-386
TOTAL RANGE										1125-2789

1 Based on livestock use pattern mapping data depicting areas of "no use" and "slight use" by livestock within those areas identified as having moderate-high elk habitat potential. Total public acres unavailable to livestock is based on 100% of those acres mapped as "no use" and 10% of those acres mapped as "slight use" (1-20% utilization).

2 Based on WRA average of 11.4 acres/AUM.

3 Based on wild horse herd management area initial herd sizes identified in the Wells RMP Approved Wild Horse Amendment and Decision Record, signed August 2, 1993.

4 Based on wild horse census information and professional judgement to determine wild horse use within "no use" and "slight use" livestock use areas within moderate to high elk habitat areas.

5 Total wild horse use multiplied by percent use within "no use" and "slight use" livestock use areas.

6 AUMs unavailable to livestock less AUMs wild horse use.

7 Based on a conversion factor range of 1.25 elk/AUM - 3.1 elk/AUM.

8 Current elk population management in the Pilot Mountain Management Area maintains a population of 250 elk in Nevada. Future population management objectives remain the same. This data analysis identifies fewer supportable elk numbers than currently managed. Because the percent public land is only 49%, this would indicate elk numbers being supported by private land habitat without conflict.

APPENDIX E

NEVADA DIVISION OF WILDLIFE
ELK MANAGEMENT SUMMARY

INTRODUCTION

The management determinations for Alternatives 2 through 5 of the proposed elk plan amendment stipulate that elk population levels will be managed through population management strategies developed and implemented by the Nevada Division of Wildlife (NDOW). The purpose of this appendix is to provide a summary of current elk management strategies implemented by the Nevada Division of Wildlife (NDOW) together with additional background information.

HARVEST MANAGEMENT

Elk management in Nevada is authorized by provisions set forth in Nevada Revised Statutes (NRS), Nevada Administrative Code, the Nevada State Board of Wildlife Commission Policies, and the Nevada Division of Wildlife's Policies and Procedures. Final management actions, i.e. harvest recommendations and elk transplants, are subject to public review through local County Boards to Manage Wildlife and State Board of Wildlife Commission Public Meetings. Transplants on public lands are further analyzed and reviewed by the public in National Environmental Policy Act (NEPA) documents such as EA's prepared by land management agencies for implementation of proposed habitat management plans.

The Division of Wildlife conducts annual helicopter elk surveys to assess age and sex ratios of the population in order to predict population growth and provide harvest management recommendations. Monitoring of the elk population is aided by use of ear tagging transplanted animals, use of radio telemetry collars, and documentation of elk sightings. A hunting season is initiated as soon as a population becomes established and surveys indicate that the age structure of the male segment of the population is adequate to support a quality elk hunting experience without detriment to the biological health of the herd. Female harvest is normally initiated in response to depredation problems or when federal agency vegetation monitoring supports a need to stabilize or reduce elk numbers. Therefore, elk hunting is utilized to maintain elk populations within the carrying capacity of the vegetative resources.

Depredation legislation, policy and procedures guide elk management where pioneering or established elk populations depredate on private land resources. If vegetative monitoring by public land management agencies supports a conclusion that elk populations are consuming vegetative resources at a level inconsistent with land use planning objectives, one or more of the following actions are taken:

1. Establish an elk hunting season to stabilize the elk population.

2. Establish an elk hunting season to reduce the elk population to an acceptable level.

3. Establish an elk hunting season to eliminate the elk population.

Any and all actions to control elk populations are subject to the normal Division of Wildlife public season setting processes.

DEPREDATION

Elk depredation problems are addressed through provisions outlined in the Division of Wildlife's Program and Procedure regarding Elk Depredation.

In 1989, the Nevada Legislature, with support from the Division of Wildlife, passed elk damage payment legislation. This legislation has enabled the Division of Wildlife to effectively respond to elk depredation complaints through establishment of a fund collected from sportsmen in the application process for elk tags. Sportsmen agreed to an additional $5 fee for the elk tag application process which generates more than $25,000 annually for mitigating elk depredation problems. A Program and Procedure has been established by the Division of Wildlife to "adequately respond to and/or compensate for depredation damage caused by elk". Since establishment of the fund, all active elk depredation have been addressed through payment and fencing for both stored and standing crops throughout the state.

In addition to the Program and Procedure governing elk damage and damage payments described above, NRS 503.595 mandates that the Division of Wildlife can implement more drastic measures to alleviate or solve a big game depredation problem, including elk, through a removal program. In general, if pioneering elk, recently transplanted elk, or established individuals become involved in a depredation situation, the Division investigates and implements a course of action including hazing, fencing, damage payments, and removal/dispersal of offending animals by trapping or hunting/shooting designed to solve or eliminate that problem. If possible, the Division attempts to remove offending animals through an emergency depredation hunt with public participation. If conditions do not allow for the safe and/or effective removal of offending animals with a public hunt, Division personnel may remove them by trapping and transplanting or shooting. Elk have been removed in the past by Division personnel to alleviate depredation problems. Any and all actions taken against depredating elk are coordinated with the private land owner and sufficient actions necessary to solve the problem are taken.

APPENDIX F

PUBLIC COMMENT SUMMARY FOR WELLS RESOURCE MANAGEMENT PLAN ELK AMENDMENT AND ENVIRONMENTAL ASSESSMENT

Each comment letter received during the public comment period was carefully reviewed and all substantive comments which addressed inadequacies or inaccuracies in the facts or analysis or methodologies used; identified new impacts or recommended reasonable new alternatives or mitigation measures; or involved substantive disagreements or interpretations of significance relating to the issues discussed in the draft plan amendment have been evaluated, summarized, and responded to below under the following categories:

A. FORAGE ALLOCATION

1. **Comment:** There is too much conservatism built into the development of each alternative target population level. A side-by-side comparison would show that the number of elk proposed for each alternative is only a small percentage of the existing livestock use within the resource area. This is an improper balance of multiple use.

   Response: Planning Criteria 7, on page 4 of the draft plan amendment, states that population targets will be set at a level consistent with other existing resource values. During the initial scoping process it was recognized that elk management decisions in the Wells Resource Area could have impacts on adjacent private and public lands. Therefore, a Task Force Group comprised of resource management agency personnel, land owners and special interest groups within the tri-State area (Map 3 of draft plan amendment) was formulated to assist in the development of a reasonable range of alternative target population levels to be analyzed in the environmental assessment. The alternatives analyzed are felt to be a reasonable range considering the issues identified during scoping and the planning criteria outlined for development of this Resource Management Plan Amendment. It is not the intention of this plan amendment to allocate forage. Adjusting existing levels of grazing use to provide for improved "balance" in multiple use, as would be shown via a side-by-side comparison of use levels, is beyond the scope and intent of this document.

2. **Comment:** All livestock suspended non-use AUMs (animal unit months) should be activated before allowing any increase in elk numbers.

   Response: Suspended non-use AUMs were created following the range adjudication process conducted in the 1960's (see Appendix A of the draft plan amendment). Those AUMs of grazing preference which could not be supported by the range resource were placed in suspended non-use until such time as the range resource was capable of producing at such levels. The BLM currently conducts monitoring and periodically evaluates range conditions on an allotment basis to determine range conditions and attainment or non-attainment of multiple use objectives. If monitoring data support more forage is available on a sustained yield basis for livestock grazing, suspended AUMs could be placed in Active status or if no suspended AUMs are available, Active AUMs could be increased. Conversely, if monitoring indicates that range conditions can not support historic livestock use levels, Active AUMs could be reduced and placed in suspended non-use. An analysis of available forage potentially available for

proposed increases in elk numbers is presented in Appendix D of the draft plan amendment. This analysis of available elk forage does not conflict with the process for activation of suspended non-use AUMs for livestock. Activation of suspended non-use would be based on rangeland monitoring conducted in those areas currently utilized by livestock. The available elk forage analysis is based on forage considered unavailable for livestock. The possibility that livestock could make use of some of the areas included in the analysis and considered unavailable to livestock is recognized in the analysis and therefore conservative estimates were made for determining areas unavailable to livestock.

3. **Comment:** The available forage analysis utilizes a conversion factor range of 1.25 to 3.1 elk/AUM. The existing Wells RMP utilizes a 1.25 elk/AUM conversion factor. The use of anything other than 1.25 should be justified.

Response: The Wells RMP did not allocate forage for grazing and it is not the purpose of this plan amendment to allocate forage. In addition, the plan amendment does not propose adoption of a conversion factor. The purpose of the available forage analysis is to assist in the impact assessment for each alternative and present a range of elk numbers which could be supported by forage currently determined unavailable to livestock, utilizing certain assumptions and conservative predictions as presented in Appendix D.

In order to express available AUMs of forage in terms of elk numbers, a conversion factor must be applied which expresses the forage requirements of elk relative to the requirement of an animal unit (a 1,000 pound cow and calf up to six months, five sheep, or one horse). Conversion factors (number of elk per AUM of forage) are developed from forage consumption estimates (usually expressed in pounds of forage per 100 pounds of body weight) and a determination of body weights by age and sex class of animal as applied to estimated herd composition. The daily elk forage consumptive rate varies depending upon relative nutritional need, size and age of the animal and relative forage digestibility. Because of these variabilities and the fact that the available forage analysis is predicated on various assumptions, it was determined appropriate to present a range of supportable elk numbers rather than a finite number. Future monitoring will provide the data necessary to justify needed adjustments in all grazing uses, including elk, to meet the multiple use objectives identified through the land use planning process.

In order to present a range of supportable elk numbers, a range of conversion factors was necessary. The Wells RMP utilizes a conversion factor of 1.25 elk/AUM to relate reasonable numbers of elk to forage demands and this number was used as the lower range. There are data available to support conversion factors as high as 3.6 elk/AUM. However, a conversion factor of 3.1 elk/AUM was determined to represent a conservative upper limit for determining supportable elk numbers based on this available forage analysis. Documentation supporting use of the 3.1 elk/AUM conversion factor has been added to the analysis in Appendix D. Subsequent habitat monitoring by the Bureau will not require conversion factors. However, recommendations for adjustments in elk numbers up or down based on monitoring would use a conversion factor.

4. **Comment:** The available forage analysis allocates all forage currently unavailable to livestock to elk. This analysis does not consider the potential to develop water and expand current livestock use areas. The intent of the Wells RMP was to activate all suspended AUMs for livestock through range improvement development. This should be accomplished before allowing elk numbers to increase.

Response: The available forage analysis presented in Appendix D is not intended to be an

allocation of forage rather it is intended to assist in the impact assessment by presenting an estimated range of elk numbers that could be supported by forage currently unavailable to livestock. As such, the analysis presented in Appendix D utilizes the best available information on livestock use patterns qualified with several assumptions. One assumption is that livestock distributions could increase, reducing those areas and AUMs identified as unavailable to livestock, with development of rangeland improvement projects; particularly water developments. Uncertainties such as these are addressed in the analysis by use of conservative assumptions listed in Appendix D.

It was not the intent of the Wells RMP to activate all suspended non-use AUMs for livestock through range improvement development. The objective of the Wells RMP relative to Livestock Grazing was "to provide for livestock grazing consistent with other resource uses resulting in an increase in 4,912 AUMs from three to five year average licensed use of 288,934 AUMs to a level of 293,846 AUMs." See the Record of Decision, page 17, LIVESTOCK GRAZING, Objective. Range improvement developments are identified as Short-Term Management Actions in the Wells RMP to provide for spring forage and allow natural recovery of the native range (seedings) and improve livestock distribution and utilization of vegetation (water developments and fences). Monitoring and adjusting grazing management systems and livestock numbers as required to a level of what the range will support consistent with other resource uses is identified as the Long Term Management Action. A discussion of the "activation" of suspended non-use AUMs for livestock is presented in the response to comment number 2.

5. **Comment:** All AUMs within the Wells Resource Area have been allocated and are owned by someone; there are no remaining AUMs for elk.

Response: A discussion of the BLM's adjudication process and the equitable apportionment of the available forage among the competing applicants to establish grazing preference for qualified livestock operators is presented in Appendix A. The Wells RMP was not intended to allocate forage, rather it established a baseline level of grazing use (3-5 year average use) from which monitoring data collected over time would be utilized to make adjustments in grazing preferences as necessary to meet established multiple use objectives. Likewise, this plan amendment is not an allocation of forage. Rather, this plan amendment proposes to establish a target population of elk for the Wells Resource Area from which adjustments will be made based on monitoring. The environmental assessment presents an analysis of available forage to assist in the impact assessment for each alternative and present a range of elk numbers which could be supported by forage currently determined unavailable to livestock, utilizing certain assumptions and conservative predictions as presented in Appendix D. Future monitoring will provide the data necessary to make adjustments in all grazing uses if necessary, including elk, to meet the multiple use objectives identified through the land use planning process.

6. **Comment:** The sportsmen should be required to pay for AUMs consumed by ELK.

Response: The broad authorities and responsibilities of Federal and State agencies responsible for management of fish and wildlife are clarified and supported by the Interior Fish and Wildlife Policy (43 CFR Subtitle A, Part 24). 43 CFR Sec. 24.4 (d) indicates "the several States therefore possess the primary authority and responsibility for management of fish and resident wildlife on Bureau of Land Management lands, the Secretary, through the Bureau of Land Management, has custody of the land itself and the habitat upon which fish and resident wildlife are dependant. Management of the habitat is the responsibility of the Government." Management of the animals is the responsibility of the State.

The BLM operates cooperatively with the Nevada Division of Wildlife (NDOW) within the framework of a Master Memorandum of Understanding (MOU). Supplements to this Master MOU are the "primary enabling documents" which initiate BLM-NDOW cooperation.

Because of this cooperative management responsibility for wildlife and habitat resources, the NDOW is not charged for AUMs consumed by wildlife. Whether or not the NDOW or sportsmen should be charged for AUMs consumed by wildlife is not within the scope and intent of this plan amendment.

7. **Comment:** Wild horse numbers within the resource area should be reduced concurrently with increased elk numbers.

Response: A Wells Resource Management Plan Wild Horse Amendment was approved August 2, 1993 and established initial herd sizes to be managed within Herd Management Areas with the objective to maintain populations at a level which will maintain a thriving ecological balance consistent with other resource values. The initial planning criteria established for this plan amendment included establishing a target elk population consistent with other existing resource values and uses (including wild horses). An adjustment of wild horse numbers is beyond the scope and intent of this plan amendment.

B. RANGE IMPROVEMENTS/HABITAT DEVELOPMENT PROJECTS

1. **Comment:** Elk numbers should not be allowed to increase until water developments proposed to accommodate elk are completed.

Response: The Affected Environment section states there is a sufficient amount of perennial water (springs and streams) within the resource area to provide an adequate quantity of water for existing uses. The Environmental Consequences section states that as elk numbers increase, the demand for available water is expected to increase. Under the Preferred Alternative, conflicts are expected to be minimal. As stated in the environmental assessment, water developments for elk would be designed to supplement existing water facilities within elk management areas away from existing grazing uses to mitigate conflicts. Increased elk numbers would not be totally dependent upon water developments identified in this plan amendment and therefore would not be necessary to allow elk numbers to increase.

2. **Comment:** Water developments for livestock should not be developed within critical wildlife habitats currently not used by livestock.

Response: The available forage analysis in Appendix D presents a range of elk numbers supportable by forage unavailable to livestock. However, several considerations or qualifiers are attached to this analysis including the fact that livestock distributions could be increased through water developments, reducing those areas and AUMs identified as unavailable to livestock. The analysis attempts to offset those considerations or qualifiers by making several conservative assumptions as to areas not used by livestock and forage production. Water developments are identified as Short-Term Management Actions in the Wells RMP to improve livestock distribution and utilization of vegetation. The site specific and cumulative impacts of all range improvements (including water developments), including impacts to critical wildlife habitat, will be addressed through National Environmental Policy Act (NEPA) compliance documentation on a case by case basis. The site specific environmental analysis will determine how each project will be designed and authorized.

3. **Comment:** Fence maintenance responsibilities following damage by elk need to be made more clear in the plan amendment through identification of standard operating procedures, etc.

Response: Generally, the impact assessment concludes that as elk populations increase the potential for fence damage could increase. Although it is recognized that fence damage could occur, it is difficult to determine the level of impact until populations increase and seasonal use areas become established. Fence modifications and/or construction of low maintenance elk pass structures are identified as reactive mitigation. The management determinations increase the amount of fence modifications, etc. with each increased population alternative.

4. **Comment:** Range Improvement Funds generated through grazing fees should be used to develop range improvement projects currently identified in the Wells RMP and should not be utilized to develop elk habitat projects.

Response: The Bureau is authorized to plan, design, construct, purchase, and maintain renewable resource improvements and treatments under numerous statutes. The Taylor Grazing Act of 1934, as amended, provides for range improvement funds to be derived from one-half of the grazing fee receipts. The Public Rangeland Improvement Act of 1978 defined range improvement to include "any subactivity or program on or relating to rangelands which is designed to improve production of forage, change vegetative composition, control patterns of use, provide water, stabilize soil and water conditions, and provide habitat for livestock and wildlife." The Federal Land Policy and Management Act of 1976 specifically directs that range improvement funds be expended for on-the-ground rehabilitation, protection, and improvement of rangelands. It is Bureau policy that range improvement funds are to be used for on-the-ground projects, utilizing other program appropriated program funds for project planning, resource clearances, etc. The projects identified in this plan amendment will be in addition to projects listed in the existing Wells RMP. Expenditure of range improvement funds will be prioritized according to Bureau regulation, policy and procedure. Therefore, range improvement funds could be spent on elk habitat improvements. However, Management Determination 12 in the proposed plan amendment states range improvement projects to improve distribution and forage quality and quantity for livestock and mule deer will have priority over elk management objectives.

The Federal Land Policy and Management Act allows for acceptance of contributed funding for range improvements from other than grazing permittees. It is anticipated that funding will be available from sportsmen groups for elk habitat improvement.

5. **Comment:** Under Management Determination 2 in Alternative 3, it is stated that "habitat development projects would be completed". It is recommended that the word should or could be used because stating that these projects would be completed implies that these projects are necessary to accommodate the target population level and could restrict efforts to achieve target population levels.

Response: Management determinations are presented under each alternative to facilitate impact analysis and therefore necessitate the use of the word "would". The quantity of specific projects identified is included as part of the impact analysis as an estimate required to mitigate potential conflicts. Planning Criteria 6 of the plan amendment states that decisions concerning the need for specific elk habitat improvement projects will be made in subsequent activity-level plans or multiple use decisions and analyzed through NEPA compliance documentation.

C. IMPACTS OUTSIDE RESOURCE AREA

1. **Comment:** Elk populations should be managed within the Wells Resource Area at a level which does not allow pioneering outside the Wells Resource Area; i.e. onto adjacent USFS lands or BLM lands which may have forest or land use plans which preclude elk management.

   Response: It is the objective for each alternative analyzed in the environmental assessment for this plan amendment to "manage public lands in the Wells Resource Area on a sustained yield basis to support elk populations at a level consistent with other resource needs, while minimizing impacts to adjacent private land resources." In the Scoping section of this plan amendment, it was recognized that elk management decisions in the WRA could have impacts on adjacent private and public lands. Therefore, a task force consisting of resource management agency personnel, land owners and special interest groups within the tri-state area of Nevada-Utah-Idaho was utilized to formulate planning issues, identify the scope of environmental analysis, identify management alternatives to be considered, and provide baseline information. The impact analysis considers the potential for pioneering within the resource area for each alternative analyzed but does not consider the potential for pioneering outside the resource area. This issue has been added to the impact assessment for each alternative.

D. WATER RIGHTS

1. **Comment:** Existing perfected water rights will be impacted by increased elk numbers.

   Response: The impact analysis for each alternative target population level concludes that conflicts with available waters are expected under Alternatives 4 and 5 (Moderate and High Densities) with mitigation beginning to lose effectiveness or resulting in moderate success. Under Alternatives 1 through 3, including the Preferred Alternative, minimal impacts are expected and mitigation via habitat improvements is expected to be effective. Customary use of water by wildlife is protected by state statute. The Nevada Revised Statutes (NRS 533.367) states "Before a person may obtain a right to the use of water from a spring or water which has seeped to the surface of the ground, he must insure that wildlife that customarily uses water will have access to it."

E. MONITORING AND FUTURE ADJUSTMENTS

1. **Comment:** In order to ensure accurate population estimates, the census of elk populations should be accomplished by an impartial third party; i.e. someone other than the NDOW.

   Response: As discussed in the response to Comment 6 under Forage Allocation above, the NDOW is charged with the responsibility to manage wildlife populations and the BLM has the responsibility to manage wildlife habitat on public lands. Because of this cooperative management responsibility for wildlife and habitat resources outlined within the framework of a Master MOU, the BLM defers the responsibility for wildlife population census to the NDOW.

2. **Comment:** A Memorandum of Understanding between the BLM and the NDOW does not appear to be strong enough or enforceable enough for the NDOW to commit to management for target elk population levels selected through this land use planning process. However, whatever mechanism is used to secure this commitment should include specific threshold levels of conflict for which adjustments in elk management are required. In addition, the BLM should not simply make a recommendation to the NDOW to reduce numbers for example, such

adjustments should be required through issuance of a decision by the BLM.

Response: Because of the broad authorities and responsibilities of Federal and State agencies responsible for management of fish and wildlife, the BLM operates cooperatively with wildlife agencies within the framework of a Master MOU. Supplements to this Master MOU are the primary enabling documents which initiate BLM-NDOW cooperation. A Supplement to the Master MOU for elk management in the Wells Resource Area would provide the necessary commitment for cooperative elk management. Specific thresholds levels of conflict become the multiple use objectives identified in the Wells RMP and subsequent amendments. Rangeland monitoring data is utilized to evaluate attainment or non-attainment of these objectives. The allotment evaluation process identifies the reasons for non-attainment of specific multiple use objectives and make recommendations for necessary adjustments in management, including livestock, wild horses, and/or wildlife grazing. The necessary adjustments are then implemented through issuance of a multiple use decision by the BLM. If adjustments in wildlife numbers are determined necessary, such an adjustment would be made a part of the multiple use decision. All affected interests, including the NDOW, would receive the multiple use decision.

3. **Comment:** The Task Force which was utilized to develop the management alternatives analyzed in this plan amendment/EA should continue to be utilized in the future to evaluate future elk management efforts in the Wells Resource Area.

Response: The public land management agencies who participated on the Task Force assisting in the development of this plan amendment have indicated future land use planning efforts similar to this one may be necessary in the very near future. Because this Task Force worked so well, it is anticipated it will be used to assist in these future planning efforts. It is presently undetermined if and how the Task Group might be utilized in the future within the Wells Resource Area. The Wells Resource Area Manager could call upon this task group or a similar group for advice in future evaluations of this plan amendment.

4. **Comment:** Before an elk management target level is selected, habitat limiting factors such as winter range should be assessed. For example, the available forage analysis presented in the EA does not indicate whether a balance in seasonal forage or habitat exists for those areas used to determine available elk forage. Such an imbalance could result in conflicts with existing livestock use.

Response: The NDOW has indicated that summer range is the most limiting factor for elk habitat within the Wells Resource Area. This was made a consideration when the Task Force developed alternative target populations to be analyzed for this plan amendment. Page 14 of the draft plan amendment describes how the task force developed these alternatives. Only those public acres with moderate to high potential for elk habitat were utilized to apply alternative elk population densities; i.e. those areas determined to have limiting factors were not classified as having moderate to high habitat potential. Because limiting factors were considered in identifying habitat potentials and only those public acres with the highest habitat potential were included in the available forage analysis, the assumption was made that a balance in seasonal forage or habitat exists. This assumption will be added to the available forage analysis in Appendix D for clarity. Other conservative assumptions utilized in the available forage analysis are expected to provide for any uncertainties. Future rangeland and habitat monitoring will identify any conflicts and provide the basis for needed adjustments in target elk population levels.

5. **Comment:** There needs to be more clarification on the priorities for future adjustments in grazing use (sportsmen feel that elk should have priority, livestock permittees feel that livestock should have a priority, NDOW is giving deer priority over elk). The role monitoring will play in identifying these priorities, especially in dual cattle and elk use areas should be clarified.

Response: Planning Criteria 7, listed on page 4 of the draft plan amendment, has been reworded. Long-Term Management Actions described on page 17 of the ROD for the Wells RMP states that monitoring will be the basis for future adjustments in livestock stocking rates. The grazing regulations (43 CFR 4110.3) states that changes in grazing preference status shall be supported by monitoring. The Master MOU between the BLM and the NDOW describes the cooperative management responsibilities for wildlife and habitat. Through this cooperative management agreement, the NDOW has agreed to support the BLM's monitoring program and reduce wildlife numbers where monitoring data supports needed adjustments. In order to support adjustments in a particular class of grazing animal, monitoring will be designed to segregate forage utilization where possible. Where dual livestock and wildlife utilization can not be segregated, adjustments are made proportionately. It should be pointed out, however, that monitoring of livestock use has been ongoing for the past 10 years in some cases. Therefore, sufficient monitoring data is available to establish average historic use by livestock, wildlife, and wild horses and determine increased use by introduced grazing animals such as elk. All such considerations are made prior to making adjustments in grazing use.

F. TAKINGS/PRIVATE PROPERTY RIGHTS

1. **Comment:** It is not appropriate for the BLM to take the position that impacts to private land resources by elk is an issue to be addressed by the NDOW. The BLM is responsible for all actions authorized on public lands which might impact adjacent private lands. Therefore, the BLM is required to comply with Executive Order 12630 and prepare a Takings Implication Assessment prior to implementing the Elk Amendment.

Response: The environmental assessment for this plan amendment addresses the issue of depredation of private land resources. The impact analysis for the environmental assessment has identified that mitigation is in place, via Nevada Revised Statutes, which allows the State to address depredation on private lands (see also Appendix E of this plan amendment). In addition to monetary compensation for damage to private lands, the NDOW may also regulate the elk population by transplanting elk to other areas or permitting hunting. There is no evidence to support that the State will not, by means described in this plan amendment, fulfill its responsibility to prevent elk in the future from entering private lands or from causing significant damage. The NDOW's responsibility to address private land depredation issues has been clarified further by adding this to the planning criteria outlined for this plan amendment. This will also be made a part of the MOU for elk management in the Wells Resource Area.

Executive Order 12630 (3 CFR 554 (1988)) requires a Federal agency to consider whether administrative action will result in an unanticipated and unnecessary taking of private property under the Fifth Amendment and to prevent such a taking. This plan amendment provides for management of elk by the State, in part so as to prevent them from going onto adjacent private land or from doing any significant damage to private land resources. Therefore, allowing elk populations to expand on public lands within the Wells Resource Area will not result in any taking of private property under the Fifth Amendment. Therefore, the Bureau concludes there is no further obligation under Executive Order No. 12630 (See Lands of Sierra, Inc, 125 IBLA 15-20).

G. IMPACT ANALYSIS

1. **Comment:** The economic analysis presented in the environmental assessment for the draft plan amendment is inadequate and de-emphasizes the importance of agriculture in this region. Therefore, a comprehensive EIS should be completed to evaluate social and economic impacts of increased elk populations in Elko County.

   Response: The economic analysis presented in the environmental assessment for the draft plan amendment was prepared utilizing the most current available data for Elko County. Because of the manner in which the data is organized and made available, the affected environment for purposes of economic analysis, must necessarily be defined as Elko County.

   The NEPA requires an environmental analysis of potential impacts be prepared to determine if significant impacts will occur. It has been concluded that the environmental assessment for this document has adequately analyzed the impacts of the proposed action and impacts are not expected to be significant. Therefore, an Environmental Impact Statement is not required.

2. **Comment:** Mule deer currently offer significant economic benefits to Elko County. As elk numbers increase mule deer populations will decrease, resulting in a significant economic impact.

   Response: Conflicts with existing wildlife uses is presented as an issue and analyzed in the environmental assessment for this plan amendment. This impact assessment concludes that under the Preferred alternative potential increased impacts are expected, however, these would be low level impacts. Conflicts with existing wildlife are expected under the Moderate and High Density alternatives. The socio/economic analysis for the proposed action concludes that positive economic benefits would be associated with increased consumptive and non-consumptive elk use as elk numbers increase in the Wells Resource Area. The positive economic benefits associated with increased elk numbers would be in addition to existing economic benefits provided by existing public land uses in the Wells Resource Area including those economic benefits associated with mule deer management.

3. **Comment:** An analysis is needed to show that existing livestock, wildlife, and wild horse use will not be affected by increased elk numbers.

   Response: The available forage analysis presented in the environmental assessment for this plan amendment concludes that a range of 1,125 to 2,789 elk could be supported within the Wells Resource Area by forage currently not utilized or unavailable to livestock and wild horses on public lands having moderate to high elk habitat potential (Appendix D). The impact analysis for each alternative concludes that impacts to existing big game habitats would minimal under Alternative 2 with low level impacts occurring under Alternative 3 (Preferred Alternative). Increased conflicts with big game habitats are expected as elk numbers increase under Alternatives 4 and 5.

4. **Comment:** The level of impacts associated with time-of-day or time-of-year restrictions for other land use activities to protect critical elk habitats should be determined before allowing elk numbers to increase.

   Response: The impact analysis for this plan amendment recognizes that conflicts are expected. However, it is impossible to predict what level of conflict would occur until elk populations expand and seasonal use areas are established.

5. **Comment:** The impacts of expanding elk management within the resource area to existing activity plans should be addressed.

   Response: Planning Criteria 7 of the plan amendment limits the impacts to existing uses by increased elk populations in the resource area. Management Determination 16 of the plan amendment adds utilization by elk to existing mule deer utilization objective levels. This plan amendment does not change existing utilization objective levels for existing uses. Existing activity plans are specific management plans for existing uses which are not affected by this plan amendment. Therefore, existing activity plans are not affected unless amended to include specific elk habitat management objectives.

6. **Comment:** A NO LIVESTOCK GRAZING ALTERNATIVE should be analyzed.

   Response: A No Livestock Grazing Alternative was added to Section II of the environmental assessment as Alternative 8. This alternative was considered but eliminated from further discussion.

7. **Comment:** A NO ELK ALTERNATIVE should be analyzed.

   Response: A No Elk Alternative was added to Section II of the environmental assessment as Alternative 9. This alternative was considered but eliminated from further discussion.

8. **Comment:** The impact analysis presented in the EA should include the fact that depredation problems either have occurred or presently exist under current elk population levels in the resource area.

   Response: The impact analysis for elk use of private land resources under alternative 1 is based on experience with existing elk numbers within the Wells Resource Area. This section has been reworded to make it more clear that depredation of private land resources has occurred under existing elk population levels and that the State has been able to adequately address these problems.

9. **Comment:** The EA should analyze trade off values such as increased livestock numbers versus increased elk numbers.

   Response: An analysis of increased livestock numbers is beyond the scope and intent of this plan amendment.

10. **Comment:** A cost:benefit analysis should be prepared for increased elk numbers.

    Response: The environmental assessment analyzes the socio/economic impacts of increased elk numbers within the Wells Resource Area. It is Bureau policy that a cost:benefit analysis be completed prior to development of rangeland improvement projects.

H. STATE ISSUES

1. **Comment:** The NDOW should address the following issues:
   -Increase public acceptance of population census procedures and/or results.
   -The existing $5 application fee is not sufficient to cover the depredation program.
   -Legislation needs to be developed to allow for issuance of landowner tags.
   -A comprehensive state elk management plan needs to be developed.

-Current depredation legislation needs to be expanded to include compensation for impacts to private land resources such as open rangelands and secondary recreational impacts such as damage caused by off-road vehicle travel.
-Issue more elk tags.

Response: These are State issues concerning elk management in Nevada for which the Bureau has no authority to address.

2. **Comment:** Elk will transmit diseases such as brucellosis and blue tongue to livestock.

Response: The State of Nevada Board of Wildlife Commissioners Policy Number 21 addresses Introductions, Transplants and Exportation of Wildlife. It is part of this policy statement that the "Department will comply with all existing importation regulations."

The State of Nevada Board of Wildlife Commissioners Policy Number 26 addresses Elk Management and requires the Department to observe all pertinent Nevada State laws and Federal regulations concerning importation and release of wildlife including elk.

Brucellosis is most prevalent in elk under supplemental feeding situations. Management Determination 14 on page 13 of the draft plan amendment does not allow supplemental feeding of elk (winter feeding) on public lands in the Wells Resource Area.

I. DEFINITIONS

1. **Comment:** The following definitions need to be added to the planning criteria outlined in this plan amendment:

-depredation
-suspended nonuse
-reintroduction

Response: A definition for these terms has been added to the planning criteria for the proposed plan amendment.

J. GENERAL

1. **Comment:** This elk reintroduction plan should consider the fact that elk are not indigenous to the Wells Resource Area.

Response: Elk already occupy habitats in the Wells Resource Area and management objectives exist for elk in the Wells RMP, therefore, this plan amendment is not considered an "elk reintroduction plan". The definitions described in the response above have been added to further clarify the differences between reintroduction and reestablishment efforts. Elk populations have expanded and elk have pioneered outside those management areas identified in the Wells RMP. Therefore, the purpose of this plan amendment and environmental assessment is to evaluate a range of alternatives, including no action, which establish target elk population management levels and specific management objectives for elk which already occupy the Wells Resource Area. Whether or not elk are indigenous to the Wells Resource Area does not affect the purpose and need of this plan amendment.

2. **Comment:** The BLM does not manage wildlife populations, therefore management determinations should not make reference to target population levels. BLM's objective should be for providing good condition rangelands, allowing monitoring of elk habitat conditions to dictate elk population levels.

Response: The responsibilities for wildlife population and habitat management are clearly defined (see response to Comment 6 under Forage Allocation). Through the scoping process for this plan amendment, it was made clear that the issue of elk management in the Wells Resource Area was most understandable to all affected parties when elk management objectives were expressed in terms of population numbers. Therefore, it was determined appropriate for this plan amendment to integrate target populations levels within the elk management objectives with monitoring to support future adjustments in elk numbers.

3. **Comment:** Augmentations of elk populations by the NDOW should not be restricted to only those management areas with population levels less than half of target levels.

Response: Appendix C of the draft plan amendment presents an estimated population growth model based on natural expansion. Because the management determinations allow for augmentation of existing populations, it is difficult to predict how fast populations will increase. The impact assessment for this plan amendment is based on natural population growth with allowances for augmentations and/or reestablishments. Because of the difficulty in predicting some impacts associated with increasing elk numbers, it was determined that natural population expansion would allow the NDOW and the BLM to establish monitoring and react to potential conflicts. Management Determination 2 on page 12 of the draft plan amendment in part allows for augmentations or reestablishments of elk if existing populations are less than 50% of target population levels. This is viewed as a compromise to allow for gradual population increases yet meet the needs of the sportsmen for increased elk numbers in the Wells Resource Area.

4. **Comment:** Wilderness Study Areas within the Wells Resource Area will be affected by proposed action alternatives. The following two components of the draft plan amendment are in conflict with the Interim Management Policy for Lands Under Wilderness Review:

> -The augmentation or reestablishment of a non-threatened or non-endangered species within a WSA.
>
> -The development of habitat improvement projects to enhance or maintain elk populations within a WSA.

Augmentation or re-establishment efforts should not be allowed within a WSA or near a WSA with the intent for animals to propagate and develop a range within a WSA.

There should be no efforts made to enhance or maintain elk populations through water developments or vegetation manipulations within any WSA.

Response: These issues have been added to the planning criteria for this plan amendment.

5. **Comment:** Proposed Management Area 2 in the draft plan amendment should be further divided into two separate management areas; the northern half which is primarily public lands and the southern half which is primarily "checkerboard" lands. This would suggest different management strategies.

Response: The Task Force Group developed proposed elk management areas which coincide with existing big game management areas managed by the NDOW. Checkerboard land patterns exist within five of the six proposed elk management areas. To compensate for potential impacts to private lands within each proposed elk management area, the Task Force Group developed a private land adjustment factor (Table 4 of the draft plan amendment) to reduce alternative target population levels accordingly.