DRAFT

WELLS

RESOURCE MANAGEMENT PLAN

AND

ENVIRONMENTAL

IMPACT STATEMENT

UNITED STATES
DEPARTMENT OF INTERIOR
Bureau of Land Management
Elko District Office
Elko, Nevada

DRAFT RESOURCE MANAGEMENT PLAN

AND ENVIRONMENTAL IMPACT STATEMENT

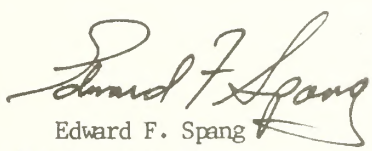
for the

WELLS RESOURCE AREA

NEVADA

Prepared by the

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
ELKO DISTRICT



Edward F. Spang
Nevada State Director

This proposed resource management plan is a long-term (20 year) plan to manage 4.3 million acres of public land within the Wells Resource Area. The action responds to the mandate of Section 202 of the Federal Land Policy and Management Act of 1976 to develop land use plans for the public land. The plan sets forth five multiple-use alternatives to guide the overall management of the resource area and site-specific decisions designed to resolve ten key management issues.

For further information contact: Rodney Harris, District Manager, P.O. Box 831, Elko, Nevada 89801 (702-738-4071).

Date by which comments must be received:

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SUMMARY

INTRODUCTION

The Bureau of Land Management is proposing to implement a long-term (20 year) resource management plan (RMP) in the Wells Resource Area (RA) of the Elko District, Nevada. The Wells RA encompasses about 5.7 million acres in northeastern Nevada, of which about 4.3 million acres are public land. The resource area is generally the east half of Elko County (see Location Map). This document describes the proposed RMP and provides an environmental analysis of the proposed action through the environmental impact statement (EIS) process.

Because of the resource area's large size it was divided into eight smaller portions called Resource Conflict Areas (RCAs) having similar resource uses and conflicts. The RCAs are Cherry Creek, Spruce/Goshutes, Mary's River, O'Neil/Salmon Falls, Goose Creek, Pilot/Crittenden, Metropolis, and Ruby/Wood Hills. The RCAs are described more fully in Chapter 2.

ISSUES

The resource management plan addresses the following issues identified early in the planning process:

1. Land Actions
2. Corridor Designation and Identification
3. Public Access
4. Recreation Management
5. Wilderness Area Designation
6. Livestock Grazing Use
7. Wild Horse Numbers
8. Terrestrial Wildlife Habitat
9. Riparian and Aquatic Habitat
10. Woodland Products

ALTERNATIVES

Analyzed in this EIS are the following alternatives: No Action, Resource Production, Midrange, Resource Protection, and Preferred. These are all multiple use oriented but each emphasizes a different balance between conflicting resources.

No Action Alternative: This alternative represents a continuation of present resource management uses and levels. The resource area would continue to be managed without a long range plan and actions would be determined on a case-by-case basis as circumstances and/or public demand dictated.

Resource Production Alternative: This alternative is designed to emphasize the management of those resources contributing to the commercial well-being of the resource area (lands, corridors, livestock grazing, woodland products, and minerals).

Midrange Alternative: This alternative is designed to provide a wide variety of goods and services to the public within the sustained use capabilities of the Wells RA.

Resource Protection Alternative: This alternative is oriented toward preservation of natural values, with emphasis on protecting wildlife and riparian habitats, wild horses, and wilderness values.

Preferred Alternative: This alternative emphasizes a balanced approach to land management in the resource area. Fragile and unique resources would be protected while not overly restricting the ability of other resources to provide economic goods and services. It is a combination of the Resource Production, Midrange and Resource Protection Alternatives.

Table S-1 displays the overall resource area wide management actions proposed for the five alternatives. Table S-2 depicts the economic impacts of the various livestock grazing actions for each alternative. Finally, Table S-3 provides a summary comparison of the impacts for each of the alternatives considered in this plan.

WELLS PLANNING AREA
ELKO DISTRICT NEVADA

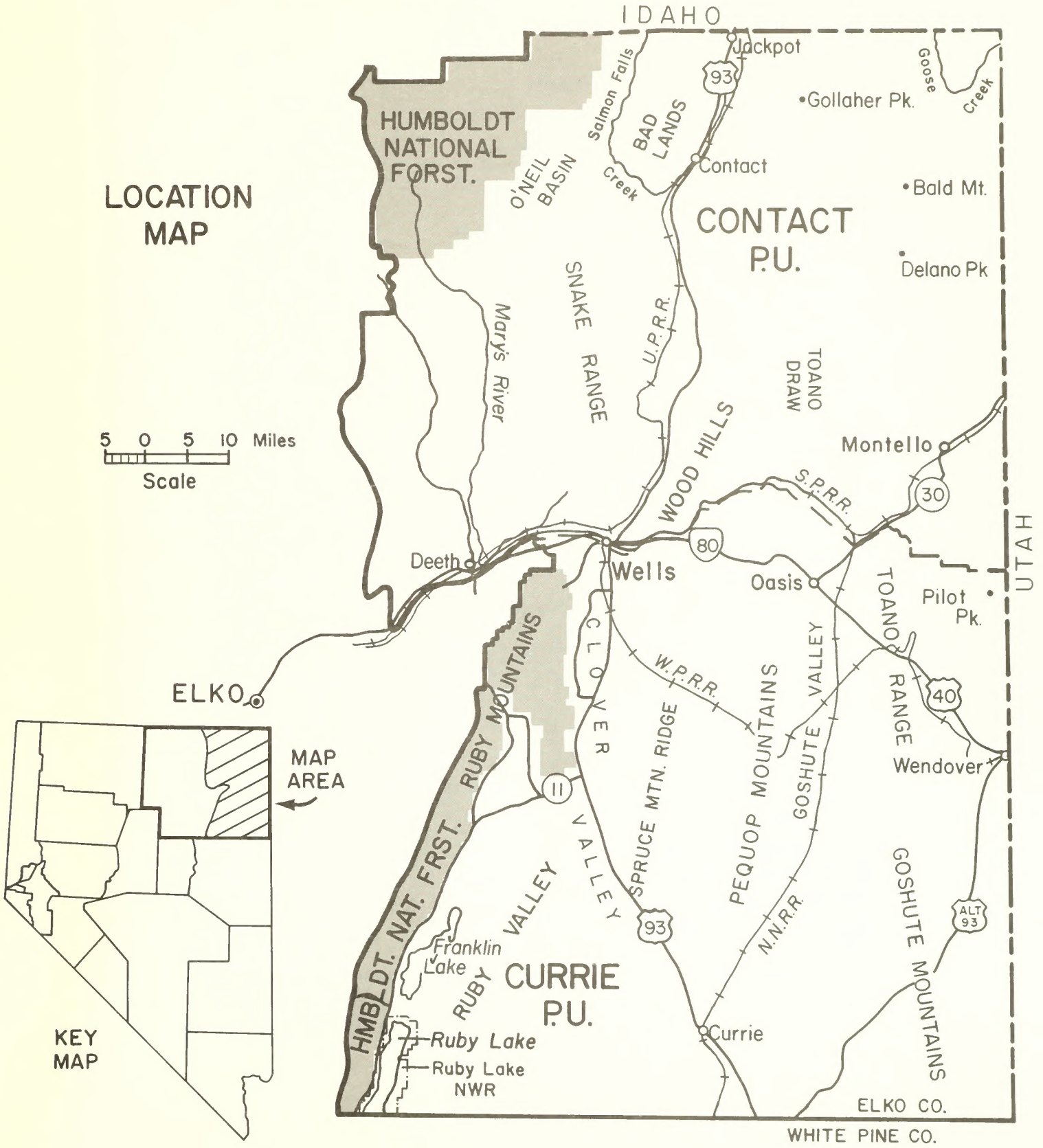


TABLE S-1

SUMMARY OF MANAGEMENT ACTIONS

ISSUE/Action	No Action Alternative	Resource Production Alternative	Midrange Alternative	Resource Protection Alternative	Preferred Alternative
LANDS: Identify for disposal	Unknown*	93,150 Acres	18,065 Acres	10,385 Acres	93,150 Acres
CORRIDORS: Designate and/or identify	Unknown*	1023 Miles	566 Miles	335 Miles	566 Miles
ACCESS: Acquire legal public access for	Unknown*	11 Roads 67 Miles	35 Roads 138 Miles	29 Roads 95 Miles	35 Roads 138 Miles
RECREATION: Manage	2 Recreation Areas	4 Recreation Areas	4 Recreation Areas	2 Recreation Areas	5 Recreation Areas
WILDERNESS: Suitable Acres	0	71,488	159,881	175,951	159,881
Nonsuitable Acres	175,951	104,503	16,070	0	16,070
LIVESTOCK GRAZING:	288,934 AUMs	383,722 AUMs	288,934 AUMs	176,211 AUMs	293,846 AUMs
Change from 3-5 yr. use	No Change	33% Increase	No Change	39% Decrease	2% Increase
WILD HORSES: Maintain	692 Horses	356 Horses	692 Horses	1384 Horses	557 to 692 Horses
TERRESTRIAL WILDLIFE HABITAT: Modify miles of fence	Unknown*	475	650	650	650
Protect numbers of springs	Unknown*	0	150	250	250
ACEC	No ACEC	No ACEC	6200 acre ACEC	16,200 acre ACEC	6200 acre ACEC
RIPARIAN/STREAM HABITAT: Improve Condition On:	Unknown*	52.4 Miles	95.5 Miles	220 Miles	95.5 Miles
Improve Condition On:	Unknown*	1610 Acres	2518 Acres	5935 Acres	2518 Acres
WOODLAND PRODUCTS:	3 RCAs under limited management	5 RCSs under intensive management	5 RCAs under intensive management	4 RCAs under intensive management	5 RCAs under intensive management
	Unknown*	5250 cords/yr	1300 cords/yr	5250 cords/yr	1300 cords/yr

* Would be determined on a case-by-case basis as circumstances and/or public demand dictated.

ACEC = Area of Critical Environmental Concern; RCA = Resource Conflict Area

TABLE S-2

ECONOMIC IMPACTS OF LIVESTOCK GRAZING ACTIONS

BY ALTERNATIVE[1/]

	Existing Wells RA Totals	Change with No Action	Change with Resource Production	Change with Midrange	Change with Resource Protection	Change with Preferred
Livestock Gross Sales	$15,948,200	0	+$1,275,000	+$ 451,600	-$ 1,651,300	+$ 558,000
Net Ranch Income	$ 5,416,000	0	+$ 537,200	+$ 206,800	-$ 799,000	+$ 235,500
Hired Ranch Labor Income	$ 1,821,400	0	+$ 254,800	+$ 85,000	-$ 399,600	+$ 110,500
Ranching Industry Employment	300	0	+ 30	+ 10	- 40	+ 13
Other Resource Area Employment	1,574	0	+ 24	+ 8	- 32	+ 10
Market Value of AUMs	$14,446,700	+$650,000	+$4,709,600	+$1,675,800	-$ 5,634,200	+$1,863,600
Elko County Tax Revenues (generated by livestock)	$ 287,000	0	+ 39,600	+$ 13,300	-$ 49,700	+$ 14,700

[1/] Figures are based on projections of AUM increases or decreases due to changes in range conditions in the long-term.

TABLE S-3

SUMMARY OF IMPACTS

ISSUE/Impact	No Action Alternative	Resource Production Alternative	Midrange Alternative	Resource Protection Alternative	Preferred Alternative
LANDS: Land values	0	- - -	- -	-	- - -
CORRIDORS: Benefits to utility & transportation companies	0	+ + +	+ +	+	+ +
ACCESS: Acquire legal public access	0	+	+ + +	+ +	+ + +
RECREATION: Quality of recreation opportunities	-	- -	+	+ + +	+ +
WILDERNESS: Preservation	0	+	+ +	+ + +	+ +
LIVESTOCK GRAZING: AUMs	0	+ + +	0	- - -	+
WILD HORSES: Numbers	0	- -	0	+ + +	+
TERRESTRIAL WILDLIFE HABITAT:					
Quality	- -	- - -	+	+ + +	+ +
Hazard Reduction	0	+	+ +	+ + +	+ + +
ACEC Designation	0	0	+	+ +	+
RIPARIAN/STREAM HABITAT: Quality	- - -	- -	+	+ +	+
WOODLAND PRODUCTS:					
Harvest	- -	+ +	+ +	+	+ +
Management quality	- -	+ +	+ +	+	+ +
MINERALS: Restrictions	0	0	-	- -	-

0 = Minimal change from the existing situation
+, + +, or + + + represents the degree of improvement in quality and/or quantity from the existing situation
-, - -, or - - - represents the degree of reduction in quality and/or quantity from the existing situation

CHAPTER 1

PLANNING ISSUES AND CRITERIA

CHAPTER 1

PLANNING ISSUES AND CRITERIA

PURPOSE AND NEED

Section 202 of the Federal Land Policy and Management Act of 1976 (FLPMA) states "The Secretary shall, with public involvement and consistent with the terms and conditions of this Act, develop, maintain, and when appropriate, revise land use plans which provide by tracts or areas for the use of the public lands." The guidance for preparing this plan, which is known as a Resource Management Plan (RMP), is contained in 43 CFR Part 1600, Public Lands and Resources; Planning, Programming, and Budgeting.

The National Environmental Policy Act of 1969 (NEPA) requires Federal agencies to prepare statements documenting the environmental consequences of Federal actions significantly affecting the human environment. Resource management plans qualify as significant actions and thus require the preparation of an environmental impact statement (EIS). The Council on Environmental Quality's Regulations for Implementation of the Procedural Provisions of NEPA (40 CFR Part 1500) provide guidance for the preparation of environmental impact statements. This document combines the preferred resource management plan and its environmental impact statement into an integrated package.

The overall purpose of the resource management planning process is to improve the resources of the resource area which would result in increased goods and services to the public land users and general public. This will be accomplished through a planning process using an interdisciplinary approach that includes participation by the public, other Federal agencies, state and local governments, and Indian tribes. RMPs are designed to make maximum use of the best available data in formulating and analyzing alternatives.

The Wells Resource Management Plan is designed to provide a framework for future management of the public lands and resources in the Wells Resource Area (RA). This framework will be established by determining which resources will be given management emphasis. This will be consistent with existing legislation, regulations, and the policy of management of public lands on the basis of multiple use and sustained yield. This will be done "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmosphere, water resource, and archaeological values" (FLPMA, Sec. 102 (a)(7) and (8)).

In addition to meeting the planning needs for the Wells RA, the RMP also fulfills other specific objectives. This draft RMP includes evaluation of four Wilderness Study Areas (WSAs) also required by FLPMA. Through study of the alternatives, the value of these WSAs for wilderness or other uses will be determined and the consequences analyzed. In accordance with BLM policy, the following procedure will be used in addressing environmental concerns pertaining to wilderness designation. Environmental impacts of wilderness designation will be incorporated into the Bureau planning process through the draft RMP stage. This draft document presents the impacts to wilderness and other resources by alternative in summary form. Comments received from this document on wilderness will be presented in a Preliminary Final Wells RA Wilderness EIS to be published as a separate document from the final RMP. This EIS will be submitted through the BLM Director and Secretary of the Interior to the President. The recommendations contained in this final wilderness EIS will be preliminary because they are subject to change by the BLM Director, Secretary of the Interior or President before they are presented to Congress for legislative action. Specific information is incorporated into the Wells RA Wilderness

Technical Report which is available on request for those who desire more information. Appendix 1 presents the BLM Wilderness Review process consisting of inventory, wilderness study, and reporting channels to Congress.

A suit was filed in 1973 in Federal Court alleging that the Bureau of Land Management's programmatic grazing EIS did not comply with the National Environmental Policy Act. As a result of the settlement of this suit, BLM agreed to prepare specific grazing EISs. The RMP will meet this objective.

Finally, the RMP will also identify lands which will be made available for sale or exchange to consolidate ownership for improved management and to meet other important public objectives.

The Planning Process

The planning process enables BLM to accommodate the uses the public wants to make of public lands while complying with the laws and policies established by the Congress and the Executive branch of the Federal government. The RMP process includes nine basic steps and emphasizes the role of public participation at several key stages.

The nine planning steps are as follows:

1. Identification of Issues: In this first step, BLM asks the public, "What is important to you in this planning area?" For the Wells RMP, a series of public meetings were held in March and April of 1979. In addition, representatives of state and local governments (including the Elko Mayor and Elko County Manager), and representatives of various user and interest groups were contacted in November 1979. As a result of these public meetings and contacts and input from BLM staff specialists, 14 planning issues were identified. These were later consolidated into the 10 issues which are presented later in this chapter.

2. Development of Planning Criteria: Criteria are developed to set standards and guidelines for planning and to ensure that the RMP is tailored to the previously identified issues. The draft version of the Wells RMP planning criteria, along with the planning issues, was distributed to the public in January 1981 in the form of a newsletter, The Sage. Approximately 4,000 copies were distributed as a supplement to the Elko Daily Free Press, while 350 copies were mailed to selected individuals, elected officials, interest groups, and other agencies. A total of 57 individuals and groups responded. These responses, along with input from the Nevada State Office, were used in formulating the final set of planning criteria.

3. Inventory Data and Information Collection: Based on the issues and planning criteria previously developed, BLM specialists inventory the resources in the planning area, determining how they are used and what condition they are in. Inventory work for the Wells RMP began with the 1979 field season and was completed in late 1981. Vegetation, wildlife, forestry, and recreation inventories were among those conducted. The information thus gathered represents the raw data base used to develop the information and analyses presented in Chapters 2, 3, and 4.

4. Analysis of the Management Situation: In this step, BLM analyzes the inventory data to define the existing situation, assess public demand for the various resources, and predict the ability of these resources to meet future demands on a sustained yield basis. Upon completing these steps, various opportunities are set forth to meet anticipated public demands and resolve potential resource conflicts (for example, the public's need for access versus livestock operators' concern over gates being left open and the possibility of vandalism). The resulting Management Situation Analysis document represents an intermediate stage in the planning process and is thus not included in this document.

5. Formulation of Alternatives: At this point, BLM formulates a range of options for managing resources. These options can range from full production to complete protection, thus giving the public lands manager the widest possible range of alternatives to choose from. Alternatives are described in Chapter 2.

6. Estimation of Effects of Alternatives: BLM estimates and describes the physical, biological, economic, and social impacts of each alternative. This environmental analysis is found in Chapter 4.

7. Selection of Preferred Alternative(s): Here the public lands manager reviews the alternatives and their effects and then selects or develops a preferred alternative. This alternative is then analyzed in turn. The preferred alternative is described in Chapter 2, while its effects are delineated in Chapter 4.

At this point, the draft plan and draft environmental impact statement (EIS), which constitute this document, are completed and released for

public review and comment. This may result in new information being presented, problems being pointed out in the BLM preferred alternative, or other alternatives being suggested.

8. Selection of Resource Management Plan: The public lands manager evaluates comments received and selects and recommends a proposed resource management plan to the BLM State Director. If this plan is not within the range of alternatives in the draft RMP and EIS and the environmental impacts are significantly different, a new draft RMP and EIS must be prepared. After review and concurrence, the State Director publishes and files the RMP and EIS.

9. Monitoring and Evaluation: Once the plan has State Director concurrence, it is implemented. BLM requests funding to carry it out and lists specific jobs needed for implementation. BLM also schedules reviews of the RMP at least every five years to determine if it is still workable. If change is required, the RMP may be amended or revised.

ISSUES AND CRITERIA

RMPs are limited to issues which are of major concern and importance to the BLM and the public it serves. The previous planning system provided detail on a wide range of issues and concerns without considering their overall significance.

Four issues, minerals, areas of critical environmental concern (ACECs), threatened and endangered (T&E) species, and range improvements, have been incorporated into other issues since the September 1981 publication of issues and planning criteria. Minerals are addressed indirectly in other issues and in the impact analysis section. ACEC and T&E species issues have been incorporated in the wildlife and riparian habitat discussion and are also considered under standard operating procedures. The range improvement issue is discussed in the specific proposals for livestock grazing under the various alternatives.

The following planning issues and criteria focus on specific resource conflicts in the Wells RA. They are divided into either land management or vegetation management issues.

LAND MANAGEMENT ISSUES

ISSUE 1: PROBLEMS OCCUR IN THE MANAGEMENT OF THE "CHECKERBOARD" AREA, AND DEMANDS ARE PLACED ON PUBLIC LANDS FOR COMMUNITY EXPANSION NEEDS AND AGRICULTURAL DEVELOPMENT.

Problems including access, accommodation of public works projects, and unauthorized uses of public lands occur in certain areas as a result of the intermingled pattern of public and private land ownership. Public lands are in demand for agricultural development, urban and residential expansion, and other intensive uses. Public lands can be disposed of for these or other purposes if disposal serves the national interest. A variety of land tenure adjustment procedures are available which could help meet these needs and resolve land management problems.

Planning Criteria

1. Public lands will be placed in one of the following categories:

Category I — lands and mineral resources which will be retained in Federal ownership and will not be considered for sale.

Category II — lands and minerals which will be considered for sale or transfer.

Category III — lands and mineral resources which will require further study in order to determine whether they should be placed in Category I or II.

2. Propose sale of a parcel of land if:

   a. It is difficult or uneconomical to manage and is not suitable for management by another Federal agency.

   b. It was acquired for a specific purpose which is no longer served by retention.

   c. Disposal would serve important public objectives and would outweigh the public objectives and values which would be served by retention.

3. Consider allowing agricultural entry where:

   a. There is unappropriated ground water available and the development of new irrigation wells meets the criteria established by the state water engineer.

   b. The land is suitable for agricultural use

as established through appropriate laws and regulations.

4. Consider for withdrawal land which another Federal agency has shown to be necessary to its programs.

5. Where a critical resource need for a tract of land is identified, consider purchase only if other forms of acquisition (such as exchange and easements, are not feasible.

ISSUE 2: ROUTES MUST BE DETERMINED FOR MAJOR TRANSMISSION LINES, PIPELINES, RAILROADS, AND OTHER UTILITY/TRANSPORTATION USES.

As demands for energy (e.g., oil and gas, new powerplants) arise, construction of interstate high voltage powerlines, pipelines, and other facilities becomes necessary. This requires designation and/or identification of corridors for existing and future major transportation and utility rights-of-way (ROWs) within the planning area.

Planning Criteria

1. Establish designated corridors for major facilities in areas that meet all of the following criteria:

a. Have existing major facilities,

b. Are technically and economically suited for such uses,

c. Correspond with designated corridors in other planning areas, and

d. Do not have significant values that would be adversely impacted. Areas having significant values could include lands with wilderness potential, Areas of Critical Environmental Concern (ACEC) designation, and/or T and E species habitat.

2. Give priority to corridor determination in the following order:

a. Use existing transmission ROWs with sufficient width to upgrade existing facilities and that will permit further expansion.

b. Follow existing secondary highways and railroads.

c. Identify corridors through undeveloped areas or along interstate highways.

ISSUE 3: LEGAL ACCESS IS NECESSARY TO ENABLE CONTINUED PUBLIC USE AND TO FACILITATE EFFECTIVE MANAGEMENT OF PUBLIC LANDS.

Legal access is defined as the lawful right to enter or leave a parcel of land. It includes the right to enter adjacent public land from an existing public road or trail, as well as from roads or trails that lead to public land through private property. Neither BLM nor the public has an inherent right of legal access to public lands over private property. As populations, recreational use, and mining activities increase, access problems could occur.

Planning Criteria

1. Select roads and trails for inclusion in the transportation system according to:

a. Type and frequency of historical use,

b. Identified public needs,

c. Management requirements, and

d. Coordination with other Federal agencies, and state, county, and local governments, Indian tribes, and affected private landowners.

2. Establish priorities for access acquisition on the basis of identified public and administrative needs.

3. Consider consolidating roads or trails that serve common purposes, origins, and/or destinations.

ISSUE 4: CERTAIN LANDS REQUIRE SPECIAL MANAGEMENT FOR THEIR RECREATION POTENTIAL.

Special recreation management can include designation, protection, and/or development of certain areas for a variety of significant recreational values. Recreation management should be designed to provide for current uses as well as to accommodate projected demands.

The National Park Service (NPS) has conducted in-

ventories to identify the best remaining relatively natural and free-flowing stream segments in the United States. Some of these stream segments may meet minimum criteria for further study as potential components of the National Wild and Scenic Rivers System. The Mary's River from the western boundary of Section 13, T. 42 N., R. 59 E., to its source was so identified.

Planning Criteria

1. In evaluating the suitability of recreational lands for special designations, protection, and/or development:

a. Identify for development those areas which receive significant recreational use.

b. Consider recreational demands outlined in the Statewide Comprehensive Outdoor Recreation Plan (SCORP), and county or local planning documents.

c. Give priority to areas which provide opportunities for more than one recreational activity.

d. Consider non-Federal areas or facilities when planning future recreation development.

2. Maintain all lands open to off-road-vehicle (ORV) use. Consider a limited or closed-to-ORV designation if:

a. Significant cultural or natural features may be damaged.

b. Harassment of wildlife or damage to wildlife habitat may occur.

c. Threatened or endangered species may be adversely impacted.

d. Wilderness suitability of WSAs may be impaired.

e. Extreme natural or manmade hazards to human life or property exist.

3. Consider whether a portion of the Mary's River from the western boundary of Section 13, T. 42 N., R. 59 E., to its source should be recommended for further study as a potential component of the National Wild and Scenic Rivers System.

The standards for inclusion are:

a. General

1. Substantially free-flowing
2. Water of high quality or water that could be restored to that condition
3. River and adjacent lands in a natural or aesthetically pleasing condition and possessing outstanding scenic, recreation, geologic, fish and wildlife, historic, cultural, or similar values

b. Wild Rivers

1. Free of impoundments
2. Inaccessible by trail
3. Primitive watershed
4. Unpolluted water

c. Scenic Rivers

1. Free of impoundments
2. Accessible in places by roads
3. Watersheds largely primitive
4. Shorelines largely undeveloped

d. Recreational Rivers

1. Some impoundments and diversion
2. Readily accessible by road or railroad
3. Some development along shore

ISSUE 5: TO DETERMINE WHETHER THE BAD LANDS, BLUEBELL, GOSHUTE PEAK, AND SOUTH PEQUOP WSAs SHOULD BE RECOMMENDED AS WILDERNESS AREAS.

BLM's wilderness review is a process which includes public involvement at local, state, and national levels. Wilderness area designation is resolved by Presidental recommendation and Congressional action.

Planning Criteria

BLM recommendations for wilderness suitability will be based on the following criteria:

1. Evaluation of wilderness values

a. Mandatory wilderness characteristics: The quality of the area's wilderness characteristics — size, naturalness, and outstanding opportunities for solitude or

primitive recreation.

b. Special features: The presence or absence, and the quality of the optional wilderness characteristics — ecological, geological, or other features of scientific, educational, scenic, or historical value.

c. Multiple resource benefits: The benefits to other multiple resource values and uses which only wilderness designation of the area could ensure.

d. Diversity in the National Wilderness Preservation System: Consider the extent to which wilderness designation of the area under study would contribute to the diversity of the National Wilderness Preservation System from the standpoint of each of the factors listed below:

1. Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.
2. Assessing the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers.
3. Balancing the geographic distribution of wilderness areas.

2. Manageability

The area must be capable of being effectively managed to preserve its wilderness character.

3. Quality Standards

a. Energy and Mineral Resource Values: Recommendations as to an area's suitability or nonsuitability for wilderness designation will reflect a thorough consideration of any identified or potential energy and mineral resource values present in the area.

b. Impacts on Other Resources: Consider the extent to which other resource values or uses of the area would be foregone or adversely affected as a result of wilderness designation.

c. Impacts of Nondesignation on Wilderness Values: Consider the alternative use of the land under study if the WSA or some portion of the WSA is not designated as wilderness and the extent to which the wilderness values of the area would be foregone or adversely affected as a result of this use.

d. Public Comment: In determining whether an area is suitable for wilderness designation, the BLM wilderness study process will consider comments received from interested and affected publics at all levels — local, state, regional, and national. Wilderness recommendations will not be based exclusively on a vote-counting majority rule system. The BLM will develop its recommendations by considering public comment in conjunction with its analysis of a WSA's multiple resource and social and economic values and uses.

e. Local Social and Economic Effect: In determining whether an area is suitable for wilderness designation, the BLM will give special attention to adverse or favorable social and economic effects.

f. Consistency with Other Plans: In determining whether an area is suitable for wilderness designation, the BLM will consider and document the extent to which the recommendation is consistent with officially approved and adopted resource-related plans of state and local governments, and Indian tribes, as required by FLPMA and BLM planning regulations.

VEGETATION MANAGEMENT ISSUES

ISSUE 6: AREAS EXIST THAT ARE IN LESS THAN GOOD CONDITION AND PRODUCING LIVESTOCK FORAGE BELOW POTENTIAL.

The central objective of the grazing management program is to manage livestock grazing in such a manner as to protect and improve rangeland condition and productivity. This objective will be accomplished through implementation of grazing systems which may require range improvements concurrent with a program of rangeland monitoring.

Range improvement efforts should be designed to improve and enhance rangeland condition, facilitate the orderly administration of public lands, and benefit the widest variety of possible uses.

Range improvements include fencing, water development, and vegetation manipulation, as well as any other facilities, structures, or projects which meet the above objectives.

Range improvement needs are site specific and are therefore outlined in individual activity plans such as Allotment Management Plans, Habitat Management Plans, and Wild Horse Management Plans. Nevertheless, all range improvements impact many resource values in a given area, and certain considerations apply to general types of range improvements regardless of their specific location or primary intended purpose.

Planning Criteria

1. Water

   a. Design water developments to manage the rangeland resource and to accommodate the needs of the animals which can reasonably be expected to use the water.

   b. Ensure that the public investment in all water developments is protected.

2. Fencing

   a. Restrict fencing to the minimum amount necessary to meet management objectives.

   b. Ensure that fencing conforms to Bureau standards established for the animals in that area.

   c. Coordinate with users and take precautions to avoid problem maintainance areas.

3. Vegetation Manipulations

   a. Consider vegetation manipulation on sites where production of desirable plant species is less than 25 percent of potential or where significant noxious weed problems occur.

   b. Determine the kind of manipulation to be used, considering site-specific objectives and constraints described in activity plans and outlined as follows:

      1. Use burning where a desirable understory exists for release and where overstory species can be controlled by fire.

      2. Use herbicides to control brush where a desirable understory exists for release but where overstory species are not controllable by fire, or for control of noxious weeds.
      3. Use mechanical brush removal where neither fire nor herbicides are suitable.
      4. Use seedings/planting where desired or in combination with one of the above.

   c. Seeding/planting mixtures will consist of native species, unless otherwise provided in activity plans.

4. General: Ensure that all range improvement undertakings are cost effective.

ISSUE 7: WILD HORSE POPULATIONS MUST CONTINUE TO BE MANAGED IN THE SIX EXISTING HERD USE AREAS WITHIN THE CARRYING CAPACITY OF THE RANGE WHILE MAINTAINING THE HEALTH AND VIABILITY OF THE HERDS.

Wild horse management is governed by the Wild and Free Roaming Horse and Burro Act of December 15, 1971. The purpose of the Act is to ensure the preservation of a unique feature of our Western heritage, as well as to prevent undue competition among wild horses, livestock, and big game, which can result in damage to range resources.

Planning Criteria

1. Maintain wild horse use in areas where wild horses occurred on December 15, 1971 and land ownership patterns are compatible with management of wild horses.

2. Establish population levels by determining minimum numbers necessary to maintain viable herds and maximum numbers compatible with vegetation requirements.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT IS GENERALLY IN POOR OR FAIR CONDITION AND BLM IS REQUIRED TO PROTECT AND ENHANCE WILDLIFE HABITAT.

Managing wildlife habitat involves providing the essential habitat elements of food, cover, water, and space, as well as ensuring compatibility with other resources and uses.

Planning Criteria

1. Implement wildlife management actions in the following order of priority:

   a. Maintain existing projects.

   b. Eliminate hazards to wildlife, e.g. fence modification in big game habitat, fence/ protection and development of important spring meadow complexes.

   c. Mitigate habitat conflicts among wildlife and other multiple uses.

   d. Construct new projects.

2. Determine relative needs for new habitat development projects by considering the degree of resource damage or conflicts occurring.

3. Consider chaining, burning and seeding to antelope bitterbrush, in areas where insufficient forage exists to meet demands of reasonable numbers of big game.

4. Protect special habitat features and special wildlife use areas, through ACEC designation or other means considering:

   a. The diversity and/or abundance of species use,

   b. The relative scarcity of the type of feature in the general area,

   c. The irreplaceability of the feature, and

   d. The degree to which one or more wildlife species may depend on the feature/area for survival.

ISSUE 9: THERE IS A SIGNIFICANT AMOUNT OF AQUATIC AND RIPARIAN HABITAT IN POOR AND FAIR CONDITION.

Habitats associated with water are relatively scarce and are highly productive in terms of plant and animal species diversity and abundance. They are important sources of food, water, and cover for most animal species and are popular human use areas.

Planning Criteria

1. Retain existing wetland/riparian/stream habitat under BLM administration.

2. Manage and/or rehabilitate wetland and riparian areas to improve them to, or maintain them in at least a good condition class.

3. Special management considerations will be considered for areas in the following order of priority:

   a. Those containing T and E and/or protected sensitive species.

   b. Those with existing or potential sport fishing use.

ISSUE 10: PUBLIC DEMAND HAS INCREASED FOR WOODLAND RESOURCES INCLUDING FUELWOOD, CHRISTMAS TREES, AND OTHER PRODUCTS.

The increasing demand for wood products necessitates a management program which will maintain or improve the supply of these commodities.

Planning Criteria

Determine areas to be managed for sustained yield and develop management techniques by species and project, considering:

   a. Present volume of products,

   b. Volume production capability,

   c. Reproduction potential, and

   d. Conflict with other resources.

CHAPTER 2

ALTERNATIVES

CHAPTER 2

ALTERNATIVES

INTRODUCTION

This chapter presents the alternatives considered in selecting the preferred resource management plan. While each alternative emphasizes certain resource uses such as livestock production, and wildlife habitat protection, all are oriented toward multiple use management and sustained yield without undue environmental degradation. This resource management plan is consistent with plans of other Federal, state, and local agencies located in the resource area. It is also consistent with plans of Native American groups in the resource area.

Because of its large size the Wells RA was divided into eight resource conflict areas (RCAs) having similar resource uses and conflicts. This designation is used for analysis purposes. Discussion of alternatives and impacts are based primarily on RCAs. RCA boundaries are drawn along grazing allotment boundaries to facilitate planning and impact analysis. Map 3-3 shows the RCA locations.

DESIGNATION OF RESOURCE CONFLICT AREAS (RCAs)

Each RCA has an individual combination of problems and conflicts. These major conflicts are briefly discussed below.

RCAs With a High Intensity Conflict Level

Cherry Creek RCA: This relatively small RCA (362,225 acres or 7.0 percent of the resource area) is located in the southwest portion of the resource area. This RCA is unique because livestock, wild horses (two herd use areas), wildlife, an endangered species (bald eagle), and a rare species (relict Steptoe dace) are all competing for limited resources. The potential need to designate a transportation and utility corridor for the White Pine Power Project intensifies this competition even more.

Spruce/Goshutes RCA: This, the largest of the RCAs (2,017,183 acres or 39.0 percent of the resource area) includes within its boundaries the Spruce Mountain area. Spring and summer use by livestock on the extensive salt desert shrub vegetation type is a primary conflict in this RCA. Three of the four wilderness study areas (WSAs), four wild horse herd use areas, and one proposed area of critical environmental concern (ACEC) are located in this RCA. West Wendover, Nevada and Wendover, Utah on the eastern boundary of the RCA are experiencing rapid growth.

Mary's River RCA: A medium-sized RCA (421,562 acres or 8.2 percent of the resource area), this unit encompasses the Mary's River drainage basin. Significant conflicts focus on deteriorated riparian habitat and the presence of Lahontan cutthroat trout, a threatened species. Recreation demand at Tabor Creek and along the Mary's River is intensifying in this RCA.

RCAs With a Medium Intensity Conflict Level

O'Neil/Salmon Falls RCA: This large-sized RCA (683,255 acres or 13.3 percent of the resource area) contains the Salmon Falls Creek basin. Significant vegetation conflicts involving deteriorated riparian habitat and important terrestrial wildlife habitat values occur in this RCA. One WSA is present. Other issues include recreational demand along Salmon Falls Creek and community expansion around Jackpot.

Goose Creek RCA: This, the smallest of the RCAs (210,490 acres or 4.1 percent of the resource area), encompasses the Goose Creek drainage basin. Deteriorated riparian habitat and the need to protect fisheries values are of primary concern.

Pilot/Crittenden RCA: This medium-sized RCA (540,585 acres or 10.5 percent of the resource area) is in the Great Basin drainage area. Season of use for livestock on the salt desert shrub vegetation type is the main concern in this cold desert area. Crittenden Reservoir presents excellent recreation potential.

RCAs With a Low Intensity Conflict Level

Metropolis RCA: This medium-sized RCA (595,551 acres or 11.6 percent of the resource area) lies in the checkerboard area and includes the city of Wells, the largest community in the Wells RA. Community expansion needs for Wells, land tenure adjustments in the checkerboard, and the anticipated demands and/or impacts of the proposed Thousand Springs Power Plant are the primary concerns.

Ruby/Wood Hills RCA: This relatively small RCA (322,426 acres or 6.3 percent of the resource area) covering Ruby and Clover Valleys and Wood Hills, has few significant conflicts. Increasing visitor demand on facilities at the Ruby Marsh Campground Special Recreation Management Area (SRMA) is a continuing problem.

SELECTIVE MANAGEMENT CATEGORIZATION

Table 2-1 shows grazing allotment data for each RCA. To properly understand this table and later chapters, it is essential to understand the differences between the three selective management allotment categories: Maintain (M), Improve (I), and Custodial (C).

On M category allotments the objective is to maintain current satisfactory conditions. Although range improvements are not proposed on these allotments in this RMP, some minor improvements may be developed as the need arises.
On I category allotments, the objective is to improve current unsatisfactory conditions. All range improvement projects proposed in this document are for category I allotments.

On C category allotments, the objective is to manage custodially while protecting existing resource values. While range improvements are not proposed for these allotments in this RMP, some minor improvements may be developed as the need arises. Map 3-3 shows the categorization and boundary of each allotment.

MANAGEMENT ALTERNATIVES

A no grazing alternative was considered initially and then eliminated from further study. Eliminating all livestock grazing on public lands in the Wells RA would reduce annual net ranch income by $1,985,000 and agricultural employment by 100 persons (35 percent of the 1980 agricultural employment in the Wells RA). Ranchers would have to substantially alter their operations or would go out of business due to economic hardship. The resulting breakup of families and close community ties as ranchers left the area and loss of a preferred and valued lifestyle would constitute adverse sociological impacts. Prolonged litigation from the livestock industry and a serious setback to BLM's good neighbor policy would also result. Livestock grazing is a valid use of the public lands as determined by law. Given the impracticality of the no grazing alternative and the adverse impacts which would result to the ranching community, this alternative will not be considered further.

For discussion of the alternatives, excluding the No Action Alternative, the resource area was separated into three management classifications. These are Disposal (D), Retention/Consolidation (R/C), and Retention/Management (R/M) (see Map 2-7). These were delineated on the basis that disposal areas are difficult to manage and have essentially no resource values and resource values are fewer and consequently, less cost effective to manage in R/M areas compared to R/C areas. No specific management actions will be analyzed for the R/C areas and, therefore, no further consideration will be given them.

Five multiple use oriented management alternatives have been developed in which the balance between conflicting resource uses differs significantly. They are:

1. No Action (continuation of present management)

2. Resource Production (emphasis on livestock grazing, woodland products, and minerals)

3. Midrange

4. Resource Protection

5. Preferred Action

For each alternative there is an overall goal statement and a list of objectives/management actions for each issue (lands, access, recreation, etc.). Also, detailed management actions by RCA are shown for all except the No Action Alternative. These actions are projections based on the best information currently available and are presented for analysis purposes. Issues are referred to by number. See Chapter 1 for a complete discussion of issues.

TABLE 2-1

GRAZING ALLOTMENT DATA BY RCA
FOR THE WELLS RESOURCE AREA

CHERRY CREEK RCA

Allotment	Public Land Acres	Private Acres	Total Acres	Existing Periods of Use	Grazing Preference AUMs	Average 3-5 Yr Licensed Use (AUMs)	% Grazing Preference Used	Category
Ruby #9	19,937	201	20,138	3/1 - 4/31 & 11/10-12/31	810	646	80.0	M
Bald Mountain	31,283	0	31,283	6/1 - 9/30	1,173	818	69.7	M
Currie	147,864	3,854	151,718	4/1 - 2/28	4,687	4,461	95.2	I
North Butte Valley	30,896	312	31,208	5/1 -11/30	1,645	682	41.5	M
Maverick	38,143	34	38,177	5/1 - 8/15 & 11/10-12/31	1,864	1,106	59.3	I
West Cherry Crk.	63,226	639	63,865	4/16-10/31	2,661	2,661	100.0	I
Odgers	25,319	517	25,836	4/16-10/15	1,596	1,190	74.6	I
TOTALS	356,668	5,557	362,225		14,436	11,564	80.1	3M, 4I

MARY'S RIVER RCA

Hot Creek	17,092	1,052	18,144	4/1 -11/30	4,163	4,137	99.4	M
Anderson Creek	23,366	1,870	25,236	4/16-11/30	5,467	4,667	85.4	M
Stag Mountain	37,795	1,245	39,040	5/1 - 9/30	8,273	6,720	81.2	I
Pole Creek	2,731	2,852	5,583	4/1 -10/31	516	201	39.0	C
Stormy	43,086	21,423	64,509	4/16-11/30	6,294	3,942	62.6	I
Devils Gate	35,701	29,329	65,030	4/10- 5/31	6,117	5,232	85.5	I
Deeth	120,148	55,175	175,323	4/10-12/31	22,437	20,367	90.8	I
Morgan Hill	12,737	14,960	28,697	4/10-11/30	1,127	201	17.8	C
TOTALS	292,656	127,906	421,562		54,394	45,467	83.6	2M, 4I, 2C

TABLE 2-1 (Continued)

GRAZING ALLOTMENT DATA BY RCA

SPRUCE/GOSHUTES RCA

Allotment	Public Land Acres	Private Acres	Total Acres	Existing Periods of Use	Grazing Preference AUMs	Average 3-5 Yr Licensed Use (AUMs)	% Grazing Preference Used	Category
Big Springs	294,396	188,200	482,616	3/1 - 2/28	18,272	8,788	48.1	I
Pilot	81,557	61,525	143,082	11/12- 3/15	12,491	4,827	38.6	M
Ferber Flat	20,433	0	20,433	12/7 - 4/20	2,735	1,184	43.3	M
Lead Hills	80,603	194	80,797	11/1 - 3/31	7,930	3,214	40.5	M
Boone Springs	78,936	797	79,733	11/1 - 3/31	3,198	1,199*	—	M
Chase Springs	45,496	928	46,424	4/1 -11/30	2,586	1,131	43.7	I
White Horse	61,571	0	61,571	11/8 - 4/ 8	7,500	2,146	28.6	M
Sugarloaf	23,170	0	23,170	12/15- 4/25	3,105	603	19.4	M
Leppy Hills	68,703	4,292	72,995	12/15- 4/25	3,476	803	21.4	M
Spruce	797,164	16,103	813,267	3/1 - 2/28	35,565	17,380	48.9	I
West White Horse	7,208	0	7,208	12/15- 3/31	670	478	71.3	M
Bad Lands	19,812	0	19,812	12/15- 3/31	2,647	1,285	48.6	M
Utah-Nev #1	119,411	1,206	120,617	11/10- 5/10	13,766	4,048	29.4	M
Antelope Valley	45,367	91	45,458	12/1 - 5/31	5,072	1,984	39.1	M
TOTALS	1,743,827	273,356	2,017,183		119,013	49,070	41.2	11M, 3I

* Allotment has taken total nonuse for the time period used in computing licensed use; the figure used represents approximately half of the overall average percent of grazing preference used in the Wells RA.

O'NEIL/SALMON FALLS RCA

Buckhorn	57,982	1,111	59,093	4/1 -10/31	6,775	6,635	97.9	I
Gully	11,355	1,573	12,928	5/1 -11/30	1,633	2,100	128.6	M
Hubbard Vineyard	112,954	6,891	119,845	4/1 -12/31	13,096	13,029	99.5	I
Bear Creek	1,207	1,660	2,867	7/1 -10/31	240	240	100.0	C
Jackpot	66,371	3,766	70,137	5/15- 1/31	7,006	7,034	100.4	M
O'Neil	85,141	4,670	89,811	4/16-10/20	14,198	13,157	92.7	M
Salmon River	276,398	35,177	311,575	4/16-12/31	27,304	27,304	100.0	I
Cottonwood	16,866	133	16,999	4/1 -10/31	1,680	2,108	125.5	M
TOTALS	628,274	54,981	683,255		71,932	71,607	99.5	4M, 3I, 1C

TABLE 2-1 (Continued)

GRAZING ALLOTMENT DATA BY RCA

GOOSE CREEK RCA

Allotment	Public Land Acres	Private Acres	Total Acres	Existing Periods of Use	Grazing Preference AUMs	Average 3-5 Yr Licensed Use (AUMs)	% Grazing Preference Used	Category
Big Bend	52,490	7,657	60,147	4/1 -12/31	10,207	7,112	69.7	I
Grouse Creek	15,566	345	16,911	4/16-10/15	1,983	1,981	99.9	I
Barton	3,225	2,644	5,869	5/1 -11/30	810	795	98.1	M
Cavanaugh	Admin. by	Burley	BLM D.O.	8/1 - 9/30	191	191	100.0	M
Bluff Creek	51,180	5,192	56,372	4/16-11/30	6,445	6,747	104.7	M
Little Goose Cr	67,852	3,339	71,191	4/1 -12/31	6,268	6,332	101.0	I
TOTALS	191,313	19,177	210,490		25,904	23,158	89.4	3M, 3I

PILOT/CRITTENDEN RCA

Pilot Valley	49,398	56,198	105,596	4/1 - 2/28	5,197	4,908	94.4	C
Dairy Valley	51,657	37,995	89,652	4/16-10/15	7,231	6,900	95.4	I
Gamble Individual	338,292	7,045	345,337	4/15-10/31	18,335	18,335	100.0	I
TOTALS	439,347	101,238	540,585		30,763	30,143	98.0	2I, 1C

METROPOLIS RCA

Black Butte	27,687	19,747	47,434	4/1 -10/31	6,474	6,573	101.5	M
Town Creek	5,534	5,912	11,446	5/1 - 8/31	1,110	833	75.0	C
Rabbit Creek	5,218	0	5,218	4/1 - 9/30	1,072	1,123	104.8	I
Bishop Creek	9,271	6,373	15,644	4/16- 9/30	1,362	1,192	87.5	M
Wells	2,686	1,702	4,388	5/1 - 9/30	551	551	100.0	C
Dalton	1,539	1,889	3,428	5/1 - 9/30	347	407	117.3	C
Antelope	3,714	595	4,309	5/1 - 9/30	478	554	115.9	I
H.D.	238,254	142,405	380,659	3/1 - 2/28	22,136	22,136	100.0	M
Holborn	26,290	22,906	49,196	4/1 -11/30	2,267	2,200	97.0	M
Cedar Hill	4,900	4,595	9,495	5/15-10/31	1,031	878	85.2	C
Metropolis	24,554	11,476	36,030	4/16- 9/30	2,510	2,020	80.5	M
Railroad Field	1,988	1,202	3,190	5/1 - 8/31	113	123	108.8	M
Westside	7,818	69	7,887	4/1 - 8/31	1,707	1,261	73.9	I
Spratling	5,219	118	5,337	3/20- 9/30	1,014	980	76.6	M
Trout Creek	2,136	2,706	4,842	4/16-10/15	642	651	101.4	C
Metropolis Seeding	2,417	0	2,417	4/16- 9/30	1,126	919	81.6	I
Bishop Flat	2,188	2,443	4,631	5/1 - 8/31	276	249	90.2	C
TOTALS	371,413	224,138	595,551		44,216	42,650	96.5	7M, 4I, 6C

TABLE 2-1 (Continued)

GRAZING ALLOTMENT DATA BY RCA

RUBY/WOOD HILLS RCA

Allotment	Public Land Acres	Private Acres	Total Acres	Existing Periods of Use	Grazing Preference AUMs	Average 3-5 Yr Licensed Use (AUMs)	% Grazing Preference Used	Category
Gordon Creek	808	1,134	1,942	5/15- 6/14	141	141	100.0	C
Warm Creek	1,537	0	1,537	3/1 - 6/20 & 11/15-11/30	175	159	90.9	I
Ruby #4	1,419	140	1,559	4/15- 6/15	314	314	100.0	C
Harrison	8,995	81	9,076	4/15- 6/25 & 11/1 -12/31	1,019	1,180	115.8	M
Forest	2,633	402	3,035	5/1 -10/31	316	105	33.2	C
Ruby #1	418	0	418	5/1 - 5/31	115	174	151.3	M
South Ruby	2,762	413	3,175	5/16- 7/31	196	80	40.8	C
Ruby #2	826	0	826	4/20- 9/19	237	237	100.0	M
Curtis Springs	37,433	881	38,314	11/1 - 3/31	1,841	690*	—	M
Moor Summitt	9,605	8,718	18,323	3/1 -10/15	291	358	123.0	M
Tobar	18,552	15,804	34,356	4/1 - 2/28	1,717	778	45.3	C
Snow Water Lake	18,737	382	19,119	5/1 -11/13	1,160	1,165	100.4	M
Ruby #5	16,730	881	17,611	5/1 - 9/15	1,677	1,690	100.8	M
Smiley	5,442	6,927	12,369	4/16- 9/30	492	492	100.0	M
Ruby #7	12,443	518	12,961	5/16- 9/15	1,103	1,153	104.5	M
Hylton	2,449	1,744	4,193	4/15- 7/15	763	1,008	132.1	M
Wood Hills	40,016	31,441	71,457	4/1 -11/30	958	145	15.1	M
Clover Creek	2,603	26	2,629	5/1 -11/15	342	342	100.0	M
Big Meadows	14,529	147	14,676	5/1 -11/30	1,155	979	84.8	M
Ruby #6	16,101	163	16,264	5/1 -11/30	1,629	1,345	82.6	M
Ruby #8	28,890	174	29,064	4/15- 9/30	1,967	1,806	91.8	I
Mayhew Creek	1,032	0	1,032	5/1 - 5/30	156	127	81.4	C
Kelly Field	194	92	286	5/1 - 5/30	27	27	100.0	C
Bennett Field	1,175	1,623	2,798	5/15- 9/15	180	154	85.6	C
Overland Creek	264	79	343	6/15- 8/31	39	15	38.5	C
Ruby #3	4,666	406	5,072	4/16- 8/15	611	611	100.0	M
TOTAL	250,259	72,176	322,435		18,621	15,275	82.0	15M, 2I, 9C
GRAND TOTALS (Wells RA)	4,274,757	878,529	5,153,286		379,279	288,934	76.2	45M, 25I, 19C

* Allotment has taken total nonuse for the time period used in computing licensed use; the figure used represents approximately half of the overall average percent of grazing preference used in the Wells RA.

Source: Bureau of Land Management 1982f.

NO ACTION

ALTERNATIVE

GOAL: The No Action Alternative represents a continuation of present resource uses and levels. No major resource developments would take place.

OBJECTIVES/MANAGEMENT ACTIONS

Each resource issue listed below contains an objective statement to be met under this alternative, followed by the management actions proposed to attain that objective.

ISSUE 1: LANDS

Objective: To continue to allow disposals, land tenure adjustments, and land use authorizations without benefit of long range goals as long as the land is physically suited for the purpose applied for, or in the case of land exchanges, if public benefit would result.

Short and Long-Term Management Action: Allow lands actions on a case-by-case basis either initiated by public application and/or Bureau initiative using all of the various land laws available.

ISSUE 2: CORRIDORS

Objectives: Allow intra/interstate transportation and utility ROWs on a case-by-case basis.

Short and Long-Term Management Action: Do not propose for designation or identification any transportation and utility corridors.

ISSUE 3: ACCESS

Objective: To continue acquisition of legal access on a case-by-case basis.

Short and Long-Term Management Action: Consider requests from the general public and other state and Federal agencies against BLM's identified needs to determine priorities for acquiring access. Acquire access in accordance with this priority listing.

ISSUE 4: RECREATION

Objective: To continue recreation management without the benefit of any resource area plan.

Short and Long-Term Management Actions: (see Map 2-1)

1. Continue to intensively manage Ruby Marsh Campground as a Special Recreation Management Area (SRMA). Continue to extensively manage the remainder of the Wells RA for dispersed recreation.

2. Since no ORV designations would take place, continued unrestricted ORV use would occur.

ISSUE 5: WILDERNESS (No Wilderness Alternative)

Objective: To manage all lands currently under wilderness review as nonwilderness.

Short-Term Management Action: Recommend as nonsuitable for wilderness designation all of the four WSAs totalling 175,951 acres. Map 2-2 shows the general location of the WSAs and Maps 2-3 to 2-6 display wilderness suitability for each WSA by alternative.

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	0	55,665
Goshute Peak	0	69,770
South Pequop	0	41,090
Bad Lands	0	9,426
TOTAL	0	175,951

ISSUE 6: LIVESTOCK GRAZING

Objective: To continue livestock grazing management with no resource area plan. No changes in current livestock grazing practices would occur, and range improvements would be implemented on a case-by-case basis.

Short and Long-Term Management Actions:

1. Continue the use level of 288,934 AUMs by livestock. This represents the three to five year average licensed use level.

2. Implement or alter present livestock grazing systems and practices on a case-by-case basis.

ISSUE 7: WILD HORSES

Objective: To continue management of the six existing wild horse herds (see Map 3-4) with no resource area plan, but in accordance with the requirements of the Wild and Free Roaming Horse and Burro Act, as amended.

Short and Long-Term Management Actions:

1. Continue to monitor wild horse populations and habitat conditions.

2. Conduct wild horse gatherings as necessary to maintain numbers near the 1981 estimated level of 692 animals.

3. Remove wild horses from private land if requested.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

Objective: Continue to manage wildlife habitat (see Maps 3-5 and 3-6) with no resource area plan, ensuring on a case-by-case basis that wildlife habitat values are taken into account in multiple use management.

Short and Long-Term Management Actions:

1. Maintain all existing wildlife projects.

2. Continue to monitor the interaction between wildlife habitat condition and other resource uses, ensuring only essential and crucial wildlife habitats are maintained.

3. On a case-by-case basis, implement wildlife habitat projects only in essential and crucial habitats.

4. Apply existing time of year restrictions to protect crucial wildlife habitats as they now appear in the district's Oil, Gas and Geothermal Environmental Assessment.

5. No ACECs are proposed

ISSUE 9: RIPARIAN/STREAM HABITAT

Objective: To continue to manage riparian/stream habitat (see Maps 3-7 and 3-8) with no resource area plan, ensuring on a case-by-case basis that riparian/stream habitat values are taken into account in multiple use management.

Short and Long-Term Management Action: Continue to evaluate the interaction between riparian/stream habitat and other resource uses.

Remedy situations, on a case-by-case basis, where significant resource conflicts, undue degradation of the environment, or adverse impacts to T&E species occur.

ISSUE 10: WOODLAND PRODUCTS

Objective: To continue to issue permits for woodland products on a case-by-case basis in response to existing and future private and commercial demands.

Short and Long-Term Management Actions:

1. Continue to issue permits for Christmas trees, fuelwood, fence posts, and pinenuts on a case-by-case basis in response to private and commercial demand.

2. No woodland product harvest plan would be implemented to incorporate sustained yield concepts.

RESOURCE PRODUCTION

ALTERNATIVE

GOAL: The Resource Production Alternative is a multiple use alternative designed to emphasize the management of those resources contributing to the commercial well-being of the resource area (lands, corridors, livestock grazing, woodland products, and minerals). Table 2-2 shows the management actions for each issue by RCA.

OBJECTIVES/MANAGEMENT ACTIONS

Each resource issue listed below contains an objective statement to be met under this alternative, followed by the management actions proposed to attain that objective.

ISSUE 1: LANDS

Objective: To allow disposals, land tenure adjustments, and land use authorizations based on long range goals. These goals are to identify lands to be disposed of or retained and administered for multiple use. These identifications are based on land manageability and quality of resource values and are shown on Map 2-7.

Short and Long-Term Management Action: Dispose of 93,150 acres, including community expansion lands primarily through public sale.

ISSUE 2: CORRIDORS

Objective: To determine the maximum possible number of designated and identified transportation and utility corridors.

Short-Term Management Actions: (see Map 2-8)

1. Meet all corridor needs projected to the year 2020 in the Western Regional Corridor Study (Western Utility Group 1980).

2. Propose for designation and/or identification 1,023 miles of transportation and utility corridors including all routes for the proposed White Pine and Thousand Springs Power Projects.

ISSUE 3: ACCESS

Objective: To acquire legal access for routes which would enhance management for commercial resource production.

Long-Term Management Action: Acquire legal access for 11 roads (67 miles) considered as high priority for management of livestock grazing, woodland products, and minerals.

ISSUE 4: RECREATION

Objective: To favor motorized vehicle oriented recreation and concentrated forms of recreation in areas where no significant conflicts with livestock grazing, woodland products, and/or minerals would occur.

Short-Term Management Actions: (see Map 2-1)

1. Upgrade facilities at the Ruby Marsh Campground SRMA.

2. Designate Salmon Falls Creek as a SRMA and manage Tabor Creek and Mary's River as Recreation Areas of Management Concern (RAMC). Develop new

facilities at these locations.

3. Designate the resource area "open" for ORV use except for 160 acres in the Ruby Marsh Campground SRMA, where use would be "limited" to designated roads and trails.

4. Withdraw 160 acres at the Ruby Marsh Campground SRMA from mineral entry.

5. Continue to extensively manage the remainder of the Wells RA for dispersed recreation.

ISSUE 5: WILDERNESS

Objective: To manage as wilderness those portions of the WSAs where no identified existing or potential conflicts with oil and gas exploration or mineral development would occur.

Short-Term Management Actions (see Maps 2-3 to 2-6)

1. Recommend portions of the Bluebell and Goshute Peak WSAs totalling 71,448 acres as preliminarily suitable for wilderness designation.

2. Recommend as nonsuitable for wilderness designation all of the South Pequop and Bad Lands WSAs and portions of the Bluebell and Goshute Peak WSAs totalling 104,503 acres. These include lands leased for oil and gas exploration, covered by mining claims, and rated by the Geology-Energy-Minerals (GEM) Assessment as having high or good energy and/or mineral potential (Bureau of Land Management).

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	25,830	29,835
Goshute Peak	45,618	24,152
South Pequop	0	41,090
Bad Lands	0	9,426
TOTAL	71,448	104,503

ISSUE 6: LIVESTOCK GRAZING

Objective: To enhance livestock forage production on a sustained yield basis resulting in an increase in AUMs from the three to five year average licensed use of 288,934 AUMs by 94,788 to a level of 383,722. This would be 33 percent over the three to five year licensed use and 1.2 percent over current preference.

Short-Term Management Actions:

1. Seed 232,000 acres and prescribe burn (without seeding) 10,500 acres to provide livestock forage.

2. Construct 645 miles of fence, drill 100 wells, develop 10 springs and install 300 miles of pipeline to improve livestock distribution and utilization of vegetation.

3. Develop activity plans and grazing systems on Category I allotments and grazing systems as needed on Category M and C allotments to meet the physiological requirements of the vegetation to ensure sustained yield.

Long-Term Management Action: Monitor and adjust grazing management systems and livestock numbers as required.

ISSUE 7: WILD HORSES

Objective: To continue management of the six existing wild horse herds (see Map 3-4) while reducing horse populations to make additional forage available for livestock.

Short and Long-Term Management Actions:

1. Continue to monitor wild horse populations and habitat conditions.

2. Conduct wild horse gatherings as necessary to reduce 1981 estimated numbers in each herd by 50 percent except for the Toano Herd which would remain at about 20 horses. The total resource area population would be maintained at about 356 animals.

3. Construct three water development projects (catchment type) with a storage tank and trough.

4. Remove wild horses from private lands if requested.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

Objective: To prevent undue degradation on all

essential and crucial wildlife habitat due to other resource uses, while eliminating all of the fencing hazards in big game crucial habitat.

Short-Term Management Action:

1. Modify 475 miles of existing fences that do not meet Bureau specifications within crucial big game ranges.

2. No ACECs are proposed.

Short and Long-Term Management Actions:

1. Limit maintenance of existing wildlife projects to those that exist in essential and crucial wildlife habitat.

2. Continue to monitor the interaction between wildlife habitat condition and commercial resource production, ensuring only essential and crucial wildlife habitats are maintained.

3. Apply time of year restrictions on leaseable and/or saleable mineral development to protect only crucial deer winter range.

ISSUE 9: RIPARIAN/STREAM HABITAT

Objective: To improve high priority riparian/stream habitat to at least a good condition.

Short-Term Management Action: Improve 805 acres/26.2 miles of deteriorated high priority riparian/stream habitat using techniques which would result in a minimum improvement of 30 percent of its condition within the short-term.

Long-Term Management Action: Improve an additional 805 acres/26.2 miles of deteriorated high priority riparian/stream habitat using techniques with results described above.

ISSUE 10: WOODLAND PRODUCTS

Objective: To maximize commercial cutting on a sustained yield basis with little emphasis given to the general public.

Short and Long-Term Management Actions:

1. Implement intensive management of Christmas tree cutting on approximately 150,000 acres and allow maximum harvest levels consistent with sustained yield management in response to demand by commercial cutters on the remaining 450,000 to 550,000 forested acres.

2. Using the sustained yield concept implement management of fuelwood harvesting to allow harvest of about 5,250 cords per year.

3. Implement a program providing for competitive commercial sales.

4. Manage commercial salvage cuts on areas where pinyon pine-juniper conversions for wildlife or livestock management enhancement would occur.

5. No crown canopy removal limitations will be implemented.

TABLE 2-2

MANAGEMENT ACTIONS OF THE RESOURCE PRODUCTION ALTERNATIVE

ISSUE /Action	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Identify for disposal, primarily by public sale	NA	9310 acres, including 6110 acres for community expansion of West Wendover	NA	2945 acres for community expansion of Jackpot	NA	72,245 acres for community expansion of Montello	590 acres for community expansion of Wells	8060 acres, including 380 acres for community exspansion of Wells	93,150 Acres
CORRIDORS: Designate and/or identify miles of corridor	92	380	54	57	NA	75	279	86	1023 Miles
ACCESS: Acquire legal public access for	NA	BLM Road # 1049, 1054, 1060, 1062	0 Roads & Miles	BLM Road # 1097, 1099, 1107, 1108	BLM Road # 1109	BLM Road # 1071	BLM Road # 1076	0 Roads & Miles	11 Roads
		23 Miles		20 Miles	3 Miles	17 Miles	4 Miles		67 Miles
RECREATION: Manage recreation use and/ or develop facilities at	NA	NA	Tabor Creek: Manage 600 acres, picnic tables, BBQ grills, vehicle pads Mary's River: Primitive development	Salmon Falls Creek: Manage 16 river miles, restrooms, registration boxes, signs	NA	NA	NA	Ruby Marsh Campground: Manage & withdraw from mineral entry 160 acres, gates, fence, replace firegrates	Manage 4 recreation areas
ORV Designations	Open	Open	Open	Open	Open	Open	Open	Open except 160 acres limited	Open except 160 acres limited
WILDERNESS:									
Suitable Acres	NA	Bluebell 25,830; Goshute Peak 45,618; South Pequop 0	NA	Bad Lands 0	NA	NA	NA	NA	71,448 Acres in 2 Areas
Nonsuitable Acres	NA	Bluebell 29,835; Goshute Peak 24,152; South Pequop 41,090	NA	Bad Lands 9426	NA	NA	NA	NA	104,503 Acres in 4 Areas
LIVESTOCK GRAZING:									
Seed acres	9000	185,000	13,000	10,500	8000		2000	4500	232,000 Acres
Construct miles of fence	35	450	30	55	20	35	10	10	645 Miles
Drill wells	10	54	5	6	8	8	5	4	100 Wells
Develop springs				5		5			10 Springs
Install miles of pipeline	20	180	20	20	30	15		15	300 Miles
						Prescribe burn 10,500 acres w/o seeding			Prescribe burn 10,500 acres w/o seeding
WILD HORSES:									
Reduce numbers to	122 in Maverick-Medicine; & 32 in Cherry Creek Herds	82 in Antelope Valley; 60 in Goshutes; 40 in Spruce-Pequop; & 20 in Toano Herds	NA	NA	NA	NA	NA	NA	Reduce numbers to 356 in 6 Herds
Construct water developments	1	2	NA	NA	NA	NA	NA	NA	Construct 3 water developments
TERRESTRIAL WILDLIFE HABITAT:									
Modify miles of fence	25	50	100	100	100	50	25	25	475 Miles
Protect springs	0	0	0	0	0	0	0	0	0 Springs
Identify acres of crucial deer winter range for improvement	0	0	NA	NA	NA	NA	NA	0	0 Acres
Acres of ACEC	NA	0	NA	NA	NA	NA	NA	NA	0 Acres
Improve habitat of	None	None	None	None	NA	None	NA	None	None
Maintain habitat of	Bald eagle	Bald eagle	Peregrine falcon	Potential bighorn sheep & elk	NA	Peregrine falcon & bighorn sheep	NA	Bald eagle	Maintain habitats of bald eagles, peregrine falcon, bighorn sheep, & elk
RIPARIAN/STREAM HABITAT: Improve miles of stream	7.1	NA	18.7	23.9	2.7	NA	0	NA	52.4 Miles
Improve acres of riparian	56	NA	358	1178	18	NA	0	NA	1610 Acres
WOODLAND PRODUCTS:									
Intensive management of harvesting	Christmas trees & fuelwood	Christmas trees & fuelwood	NA	NA	Fuelwood	Christmas trees & fuelwood	NA	None	Christmas trees & fuelwood (5250 cords per year)
Crown canopy removal limitations	None	None	NA	NA	None	None	NA	None	None

MIDRANGE

ALTERNATIVE

GOAL: The Midrange Alternative is a multiple use alternative designed to provide a wide variety of goods and services to the public within the sustained use capabilities of the Wells RA. Table 2-3 shows management actions for each issue by RCA.

OBJECTIVES/MANAGEMENT ACTIONS

Each resource issue listed below contains an objective statement to be met under this alternative, followed by the management actions proposed to attain that objective.

ISSUE 1: LANDS

Objective: To allow disposals, land tenure adjustments, and land use authorizations based on long range goals. These goals are to identify lands to be disposed of or retained and administered for multiple use. These identifications are based on land manageability and quality of resource values and are shown on Map 2-7.

Short and Long-Term Management Action: Dispose of 18,065 acres, including community expansion lands, primarily through public sales.

ISSUE 2: CORRIDORS

Objective: To determine designated corridors and identified planning corridors in coordination with other multiple use objectives, including visual quality.

Short-Term Management Actions: (see Map 2-9)

1. Locate corridor routes on existing rights-of-ways whenever possible.

2. Meet selected corridor needs projected to the year 2020.

3. Propose for designation and/or identification 566 miles of transportation and utility corridors including some routes for the proposed White Pine and Thousand Springs Power Projects. Also included is a narrowed width of the MM-NN corridor segment to protect wilderness quality of the South Pequop WSA.

ISSUE 3: ACCESS

Objective: To acquire legal access for routes which would enhance opportunities to use public land resources.

Long-Term Management Action: Acquire legal access for 35 roads (138 miles) considered as high priority for management of all resources.

ISSUE 4: RECREATION

Objective: To provide a wide range of recreation opportunities.

Short-Term Management Actions: (see Map 2-1)

1. Upgrade facilities at the Ruby Marsh Campground SRMA.

2. Designate Salmon Falls Creek as a SRMA and manage Tabor Creek as a RAMC. Develop new facilities at these locations.

3. Designate the resource area "open" for ORV use except for 160 acres in the Ruby Marsh Campground SRMA, where use would be "limited" to designated roads and trails.

4. Withdraw 160 acres at the Ruby Marsh Campground SRMA from mineral entry.

5. Continue to exntensively manage the remainder of the Wells RA for dispersed recreation.

Long-Term Management Action: (see Map 2-1) Manage Crittenden Reservoir (if land around the reservoir can be acquired through exchange) as a RAMC. Develop new facilities at this site.

ISSUE 5: WILDERNESS

Objective: To manage as wilderness those portions of the WSAs which are manageable as a wilderness area and for which wilderness is considered the best use of the lands.

Short-Term Management Actions: (see Maps 2-3 to 2-6)

1. Recommend portions of the four WSAs totalling 159,881 acres as preliminarily suitable for wilderness designation.

2. Recommend portions of the four WSAs totalling 16,070 acres as nonsuitable for wilderness designation. These include lands which do not meet the size criterion, are unnatural, are unmanageable as wilderness, involve existing rights-of-way, and are rated by the GEM Assessments as having high energy and/or mineral potential. (Bureau of Land Management 1983).

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	48,308	7,357
Goshute Peak	65,585	4,185
South Pequop	37,573	3,517
Bad Lands	8,415	1,011
TOTAL	159,881	16,070

ISSUE 6: LIVESTOCK GRAZING

Objective: To provide for livestock grazing consistent with other resource uses. There would be no change from the three to five year average licensed use. This represents a level that is 24 percent below preference.

Short-Term Management Actions:

1. Seed 30,000 acres, excluding areas identified for disposal under the various land laws, to provide for spring feed and allow recovery of native range. Prescribe burn (without seeding) 27,000 acres and spray (without seeeding) 1,500 acres where understory is adequate to provide for natural revegetation.

2. Construct 260 miles of fence, drill 60 wells, construct 5 reservoirs, develop 30 springs, and install 75 miles of pipeline to improve livestock distribution and utilization of vegetation.

3. Develop activity plans and grazing systems on Category I allotments and grazing systems as needed on Category M and C allotments to allow for natural recovery of range condition while considering multiple use values.

Long-Term Management Action: Monitor and adjust grazing management systems and livestock numbers as required.

ISSUE 7: WILD HORSES

Objective: To continue management of the six existing wild horse herds (see Map 3-4) consistent with other resource uses.

Short and Long-Term Management Actions:

1. Continue to monitor wild horse populations and habitat conditions.

2. Conduct wild horse gatherings as necessary to maintain numbers near the 1981 estimated level of 692 animals.

3. Construct six water development projects (catchment type) with a storage tank and trough.

4. Remove wild horses from private land if requested.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

Objective: To conserve and/or enhance wildlife habitat 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 priority spring and riparian habitat conflicts in coordination with other resource uses.

Short-Term Management Actions:

1. Modify 475 miles of existing fences within crucial and 175 miles within noncrucial big game habitats that do not meet Bureau specifications.

2. Protect enhance, and/or develop 150 spring sources for their wildlife values.

3. Designate and manage 6200 acres as the Salt Lake ACEC to protect and enhance peregrine falcon habitat (see Map 2-10).

Short and Long-Term Management Actions:

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 only essential and crucial wildlife habitats.

3. Improve habitat in areas identified as potential reintroduction sites for native species of wildlife as previously identified by NDOW. Prior to improvement of bighorn sheep habitat in the Spruce/Goshutes and Pilot/Crittenden RCAs, further study of conflicts between bighorn and domestic sheep will be undertaken in cooperation with NDOW.

4. Manage 1,000 acres of nonaquatic riparian aspen habitat.

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

6. Identify, in coordination with woodland products management about 50,000 acres of crucial deer winter habitat for improvement.

7. Apply time of year restrictions on leaseable and/or saleable mineral development to protect crucial deer winter range and sage grouse strutting and nesting habitats.

ISSUE 9: RIPARIAN/STREAM HABITAT

Objective: To improve high and medium priority riparian/stream habitat to at least a good condition and prevent the decline of riparian/stream habitat condition from other uses.

Short-Term Management Action: Improve 1,007 acres/38.2 miles of deteriorated high and medium priority riparian/stream habitat using techniques which would result in a minimum improvement of 30 percent of its condition within the short-term.

Long-Term Management Actions:

1. Improve an additional 1,511 acres/57.3 miles of deteriorated high and medium priority riparian/stream habitat using techniques with results described above.

2. Manage nondeteriorated areas to prevent a decline to less than good condition.

3. Manage new road construction and mining activities within the riparian zones.

ISSUE 10: WOODLAND PRODUCTS

Objectives: To achieve a sustained yield of woodland products and provide as wide a variety of products and services as possible to both the general public and commercial users.

Short and Long-Term Management Actions:

1. Implement intensive management of Christmas tree cutting on the entire 600,000 to 700,000 acres of woodlands.

2. Using the sustained yield concept, implement management of fuelwood harvesting to meet the present annual demand of approximately 1,300 cords. Open additional live and dead fuelwood and post harvesting areas to meet both increasing general public and commercial demands.

3. Manage salvage cuts for both the general public and commercial users on areas where pinyon pine-juniper conversions for wildlife or livestock management enhancement would occur.

4. In coordination with terrestrial wildlife management, promote the same and harvest of 50 percent canopy cover removal of woodland products on about 50,000 acres of crucial deer winter habitat. Rotate cutting areas frequently while closely monitoring compliance.

5. Open pinyon pine ranges that have a good or

better seedling to mature tree ratio to pinenut collecting.

6. Implement techniques such as fire management and harvesting practices to rejuvenate deteriorating aspen stands.

TABLE 2-3

MANAGEMENT ACTIONS OF THE MIDRANGE ALTERNATIVE

ISSUE/Action	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Identify for disposal, primarily by public sale	NA	6110 acres for community expansion of West Wendover	NA	2945 acres for community expansion of Jackpot	NA	360 acres for community expansion of Montello	590 acres for community expansion of Wells	8060 acres for community expansion of Wells	18,065 Acres
CORRIDORS: Designate and/or identify miles of corridor	37	229	36	57	NA	50	112	45	566 Miles
ACCESS: Acquire legal public access for	NA	BLM Road # 1018, 1024, 1034, 1049, 1054, 1060, 1061, 1062, 1269, 1270, 1286	BLM Road # 1064, 1069, 1096, 1275	BLM Road # 1097, 1099, 1107, 1108, 1123, 1203, 1223, 1274, 1285 & extension at Twin Meadows	BLM Road # 1109, 1136	BLM Road # 1071, 1101, 1137	BLM Road # 1076, 1081, 1082, 1272	BLM Road # 1037	35 Roads
		40 Miles	5 Miles	29 Miles	4 Miles	19 Miles	34 Miles	7 Miles	138 Miles
RECREATION: Manage recreation use and/ or develop facilities at	NA	NA	Tabor Creek: Manage 600 acres, picnic tables, BBQ grills, vehicle pads	Salmon Falls Creek: Manage 16 river miles, restrooms, registration boxes, signs	NA	Crittenden Reservoir: (if acquired) Parking area, restroom	NA	Ruby Marsh Campground: Manage & withdraw from mineral entry 160 acres, gates, fence, replace firegrates	Manage 4 recreation areas
ORV Designations	Open	Open	Open	Open	Open	Open	Open	Open except 160 acres limited	Open except 160 acres limited
WILDERNESS: Suitable Acres	NA	Bluebell 48,308; Goshute Peak 65,585; South Pequop 37,573	NA	Bad Lands 8415	NA	NA	NA	NA	159,881 Acres in 4 Areas
Nonsuitable Acres	NA	Bluebell 7357; Goshute Peak 4185; South Pequop 3517	NA	Bad Lands 1011	NA	NA	NA	NA	16,070 Acres in 4 Areas
LIVESTOCK GRAZING:									
Seed acres	7000	8000		10,000	4000			1000	30,000 Acres
Prescribe burn acres w/o seeding			7000	3500	6000	10,500			27,000 Acres
Construct miles of fence	30	80	27	53	21	34	5	10	260 Miles
Drill wells	13	10	11	6	6	9	2	3	60 Wells
Develop springs	2		9	2	10	5	2		30 Springs
Install miles of pipeline	7	10	2	16	15	15	10		75 Miles
Construct reservoirs			5						5 Reservoirs
					Spray 1500 acres w/o seeding				Spray 1500 acres w/o seeding
WILD HORSES:									
Maintain numbers at	244 in Maverick-Medicine; 64 in Cherry Creek Herds	164 in Antelope Valley; 120 in Goshutes; 80 in Spruce-Pequop; & 20 in Toano Herds	NA	NA	NA	NA	NA	NA	Maintain numbers at 692 in 6 Herds
Construct water developments	2	4	NA	NA	NA	NA	NA	NA	Construct 6 water developments
TERRESTRIAL WILDLIFE HABITAT:									
Modify miles of fence	50	100	100	150	100	50	50	50	650 Miles
Protect springs	25	25	25	25	25	10	5	10	150 Springs
Identify acres of crucial deer winter range for improvement	10,000	35,000	NA	NA	NA	NA	NA	5000	50,000 Acres
Acres of ACEC	NA	6200	NA	NA	NA	NA	NA	NA	6200 Acres
Improve habitat of	None	Peregrine falcon	None	Potential bighorn sheep	NA	None	NA	None	Improve habitats of peregrine falcon & potential bighorn sheep
Maintain habitat of	Bald eagle	Bald eagle & bighorn sheep	Peregrine falcon	None	NA	Peregrine falcon & bighorn sheep	NA	Bald eagle	Maintain habitats of bald eagle, peregrine falcon, & bighorn sheep
RIPARIAN/STREAM HABITAT: Improve miles of stream	10.0	NA	26.2	54.9	4.4	NA	0	NA	95.5 Miles
Improve acres of riparian	79	NA	505	1905	29	NA	0	NA	2518 Acres
WOODLAND PRODUCTS:									
Intensive management of harvesting	Christmas trees & fuelwood	Christmas trees & fuelwood	NA	NA	Fuelwood	Christmas trees & fuelwood	NA	Christmas trees & fuelwood	Christmas trees & fuelwood (1300 cords per year)
Crown canopy removal limitations	50%	50%	NA	NA	50%	50%	NA	50%	50%

RESOURCE PROTECTION

ALTERNATIVE

GOAL: The Resource Protection Alternative is a multiple use alternative designed for the preservation of natural values, with emphasis on management of fragile and unique resource values. Table 2-4 shows management actions for each issue by RCA.

OBJECTIVES/MANAGEMENT ACTIONS

Each resource issue listed below contains an objective statement to be met under this alternative, followed by the management actions proposed to attain that objective.

ISSUE 1: LANDS

Objective: To allow disposals, land tenure adjustments, and land use authorizations based on long range goals. These goals are to identify lands to be disposed of or retained and administered for multiple use. These identifications are based on land manageability and quality of resource values and are shown on Map 2-7.

Short and Long-Term Management Action: Dispose of 10,385 acres including community expansion lands, primarily through public sale.

ISSUE 2: CORRIDORS

Objective: To determine designated corridors and identified planning corridors which do not result in loss or damage to wildlife and riparian habitat, wild horse herd use areas, visual quality, and other fragile or unique resources.

Short-Term Management Actions: (see Map 2-11)

1. Locate corridor routes on existing rights-of-way whenever possible.

2. Meet minimal corridor needs projected to the year 2020.

3. Propose for designation and/or identification 335 miles of transportation and utility corridors including one route for the proposed White Pine and Thousand Springs Power Projects.

ISSUE 3: ACCESS

Objective: To acquire legal access for routes which would enhance management of recreation and wilderness areas, wild horses, and wildlife and riparian habitats.

Long-Term Management Actions: Acquire legal access for 29 roads (95 miles) considered as high priority for management of recreation and wilderness areas, wild horse herds, and terrestrial wildlife and riparian/stream habitats.

ISSUE 4: RECREATION

Objective: To favor dispersed recreation and reduce potential conflicts with terrestrial wildlife and riparian habitats and wild horse herds. Recreation development would be concentrated on areas which have minimal conflicts with these resources.

Short-Term Management Actions: (see Map 2-1)

1. Upgrade facilities at the Ruby Marsh Campground SRMA.

2. Designate Salmon Falls Creek as a SRMA. Develop new facilities at this site.

3. Designate the resource area "open" for ORV use except for 160 acres in the Ruby Marsh Camp-

ground SRMA and approximately 1,650 acres of the Salmon Falls Creek SRMA, where use would be "limited" to designated roads and trails.

4. Withdraw 160 acres at the Ruby Marsh Campground SRMA from mineral entry.

5. Continue to extensively manage the remainder of the Wells RA for dispersed recreation.

ISSUE 5: WILDERNESS (All Wilderness Alternative)

Objective: To manage all lands currently under wilderness review as wilderness.

Short-Term Management Action: Recommend all of the four WSAs totalling 175,951 acres as preliminarily suitable for wilderness designation (see Maps 2-3 to 2-6).

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	55,665	0
Goshute Peak	69,770	0
South Pequop	41,090	0
Bad Lands	9,426	0
TOTAL	175,951	0

ISSUE 6: LIVESTOCK GRAZING

Objective: To allow livestock grazing in all areas except those where significant conflicts with sensitive resources occur.

Short-Term Management Actions:

1. Reduce AUMs from the three to five year average licensed use of 288,934 AUMs by 112,723 to a level of 176,211. This would be 39 percent below three to five year licensed use and 54 percent below preference.

2. Prescribe burn (without seeding) 23,000 acres where understory is adequate to provide natural revegetation.

3. Construct 260 miles of fence, drill 60 wells, construct 5 reservoirs, develop 30 springs, and install 75 miles of pipeline to improve habitat for wildlife and livestock.

4. Develop activity plans and grazing systems on Category I allotments and grazing systems as needed on Category M and C allotments to allow for natural recovery of range condition while considering multiple use values.

Long-Term Management Action: Monitor and adjust grazing management systems and livestock numbers as required.

ISSUE 7: WILD HORSES

Objective: To continue management of the six existing wild horse herds (see Map 3-4) while both increasing their populations and greatly enhancing their habitat conditions.

Short and Long-Term Management Actions:

1. Continue to monitor wild horse populations and habitat conditions and reduce or eliminate conditions which conflict with maintenance of the wild and free roaming nature of the herds.

2. Allow wild horse populations of each herd to increase by 100 percent over the 1981 estimated level. The total population would then be maintained at about 1,384 animals.

3. Construct six water development projects (catchment type) with a storage tank and trough.

4. Remove wild horses from private land if requested.

Long-Term Management Action: Conduct wild horse gatherings as necessary to maintain numbers in each herd at 100 percent over their 1981 estimated level.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

Objective: 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.

Short-Term Management Actions:

1. Modify 475 miles of existing fences within crucial and 175 miles within noncrucial big game habitats that do not meet Bureau specifications.

2. Protect, enhance and/or develop 250 spring sources for their wildlife values.

3. Designate and manage 16,200 acres as the Salt Lake ACEC to protect and enhance peregrine falcon habitat (see Map 2-10).

Short and Long-Term Management Actions:

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 numbers and seasons of use to maintain or improve all wildlife habitats.

3. Minimize interaction between livestock grazing and wildlife values on all essential and crucial wildlife habitat by modifying livestock use in these areas.

4. Maximize habitat improvement in areas identified as potential reintroduction sites for native species of wildlife as previously identified by NDOW.

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

6. Identify, in coordination with woodland products management, about 50,000 acres of crucial deer winter habitat for improvement.

7. Apply time of year restrictions on leaseable and/or saleable mineral development to protect all deer winter range and all crucial sage grouse habitats.

ISSUE 9: RIPARIAN/STREAM HABITAT

Objective: To improve to at least a good condition and prevent undue degradation due to other resource uses on all BLM administered riparian/stream habitat.

Short-Term Management Action: Improve 1,618 acres/52.4 miles of riparian/stream habitat using techniques which would result in a minimum improvement of 30 percent of its habitat condition within the short-term.

Long-Term Management Actions:

1. Improve an additional 4,317 acres/167.6 miles of riparian/stream habitat using techniques with results described above.

2. Manage nondeteriorated areas to prevent a decline to less than good condition.

3. Manage new road construction and mining activities within riparian zones.

ISSUE 10: WOODLAND PRODUCTS

Objective: To manage woodland products in such a way that wildlife and riparian habitats and other values are conserved and/or enhanced. The general public will receive preference over commercial users.

Short and Long-Term Actions:

1. Implement intensive management of Christmas tree cutting on the entire 600,000 to 700,000 acres of woodlands.

2. Using the sustained yield concept, implement management of fuelwood harvesting to meet the present annual demand and the expected increasing future demand for the general public up to about 5,250 cords per year. New harvest area will be opened as existing ones are cut to desired canopy cover levels. Supply products to commercial interests on a case-by-case basis after general public demands are met.

3. In coordination with terrestrial wildlife management promote the sale and harvest of 75 percent canopy cover removal of woodland products on about 50,000 acres of crucial deer winter habitat.

TABLE 2-4

MANAGEMENT ACTIONS OF THE RESOURCE PROTECTION ALTERNATIVE

ISSUE/Action	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Coose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Identify for disposal, primarily by public sale	NA	6110 acres for community expansion of West Wendover	NA	2945 acres for community expansion of Jackpot	NA	360 acres for community expansion of Montello	590 acres for community expansion of Wells	380 acres for community expansion of Wells	10,385 Acres
CORRIDORS: Designate and/or identify miles of corridor	20	126	24	57	NA	21	B7	0	335 Miles
ACCESS: Acquire legal public access for	NA	BLM Road # 1018, 1024, 1034, 1061, 1269, 1270, 12B6	BLM Road # 1064, 1069, 1096, 1275	BLM Road # 1097, 1099, 1107, 110B, 1123, 1203, 1223, 1274, 1285 & extension at Twin Meadows	BLM Road # 1109, 1136	BLM Road # 1101, 1137	BLM Road # 1081, 1082, 1272	BLM Road # 1037	29 Roads
		17 Miles	5 Miles	29 Miles	4 Miles	3 Miles	30 Miles	7 Miles	95 Miles
RECREATION: Manage recreation use and/ or develop facilities at	NA	NA	Discontinue management of Tabor Creek	Salmon Falls Creek: Manage 16 river miles, restrooms, registration boxes, signs	NA	NA	NA	Ruby Marsh Campground: Manage & w/ draw from mineral entry 160 acres, gates, fence, replace firegrates	Manage 2 recreation areas
ORV Designations	Open	Open	Open	Open except 1650 acres limited	Open	Open	Open	Open except 160 acres limited	Open except 1810 acres limited
WILDERNESS: Suitable Acres	NA	Bluebell 55,665; Goshute Peak 69,770; South Pequop 41,090	NA	Bad Lands 9426	NA	NA	NA	NA	175,951 Acres in 4 Areas
Nonsuitable Acres	NA	Bluebell 0; Goshute Peak 0; South Pequop 0	NA	Bad Lands 0	NA	NA	NA	NA	0 Acres in 4 Areas
LIVESTOCK GRAZING:									
Prescribe burn acres w/o seeding			7,000	3,500	2000	10,500			23,000 Acres
Construct miles of fence	30	80	27	53	21	34	5	10	260 Miles
Drill wells	13	10	11	6	6	•9	2	3	60 Wells
Develop springs	2		9	2	10	5	2		30 Springs
Install miles of pipeline	7	10	2	16	15	15	10		75 Miles
Construct reservoirs			5						5 Reservoirs
WILD HORSES:									
Increase numbers to	488 in Maverick-Medicine; & 128 in Cherry Creek Herds	328 in Antelope Valley; 240 in Coshutes; 160 in Spruce-Pequop; & 40 in Toano Herds	NA	NA	NA	NA	NA	NA	Increase numbers to 1384 in 6 Herds
Construct water developments	2	4	NA	NA	NA	NA	NA	NA	Construct 6 water developments
TERRESTRIAL WILDLIFE HABITAT:									
Modify mile of fence	50	100	100	150	100	50	50	50	650 Miles
Protect springs	25	25	50	50	25	25	25	25	250 Springs
Identify acres of crucial deer winter range for improvement	10,000	35,000	NA	NA	NA	NA	NA	5000	50,000 Acres
Acres of ACEC	NA	16,200	NA	NA	NA	NA	NA	NA	16,200 Acres
Improve habitat of	None	Bald eagle peregrine falcon, & bighorn sheep	None	Potential bighorn sheep & elk	NA	None	NA	None	Improve habitats of bald eagle, peregrine falcon, bighorn sheep, & elk
Maintain habitat of	Bald eagle	None	Peregrine falcon	None	NA	Peregrine falcon & bighorn sheep	NA	Bald eagle	Maintain habitats of bald eagle, peregrine falcon, & bighorn sheep
RIPARIAN/STREAM HABITAT: Improve miles of stream	10.5	NA	58.9	123.4	22.0	NA	5.2	NA	220 Miles
Improve acres of riparian	83	NA	10B0	4662	57	NA	53	NA	5935 Acres
WOODLAND PRODUCTS: Intensive management of harvesting	Christmas trees & fuelwood	Christmas trees & fuelwood	NA	NA	Fuelwood	Christmas trees & fuelwood	NA	None	Christmas trees & fuelwood (5250 cords per year)
Crown canopy removal limitations	75%	75%	NA	NA	75%	75%	NA	None	75%

PREFERRED

ALTERNATIVE

The Preferred Alternative emphasizes a balanced approach to land management in the resource area. Fragile and unique resources would be protected while not overly restricting the ability of other resources to provide economic goods and services. It is a combination of the Resource Production, Midrange, and Resource Protection Alternatives. However, it differs in that where these alternatives employ a blanket set of management actions on a resource area wide basis, this alternative chooses the best management action for each issue to fit the specific RCA. Table 2-5 shows management actions for each issue by RCA.

OBJECTIVE/MANAGEMENT ACTIONS

Each resource issue listed below contains an objective statement to be met under this alternative, followed by the management actions proposed to attain that objective.

ISSUE 1: LANDS

Objective: To allow disposals, land tenure adjustments, and land use authorizations based on long range goals. These goals are to identify lands to be disposed of or retained and administered for multiple use. These identifications are based on land manageability and quality of resource values and are shown on Map 2-7.

Short and Long-Term Management Action: Dispose of 93,150 acres, including community expansion lands, primarily through public sale.

ISSUE 2: CORRIDORS

Objective: To determine designated corridors and identified planning corridors in coordination with other multiple use objectives, including visual quality.

Short and Long-Term Management Action: (see Map 2-9)

1. Locate corridor routes on existing rights-of-ways whenever possible.

2. Meet selected corridor needs projected to the year 2020.

3. Propose for designation and/or identification 566 miles of transportation and utility corridors including some routes for the proposed White Pine and Thousand Springs Power Projects. Also included is a narrowed width of the MM-NN corridor segment and selection of the P-GG-Q corridor segment to protect wilderness quality of the South Pequop and Goshute Peak WSAs respectively.

ISSUE 3: ACCESS

Objective: To acquire legal access for routes which would enhance opportunities to use public land resources.

Long-Term Management Action: Acquire legal access for 35 roads (138 miles) considered as high priority for management of all resources.

ISSUE 4: RECREATION

Objective: To provide a wide range of recreation opportunities.

Short-Term Management Actions: (see Map 2-1)

1. Upgrade facilities at the Ruby Marsh Campground SRMA.

2. Designate Salmon Falls Creek as a SRMA and manage Tabor Creek and Mary's River as RAMCs. Develop new facilities at these locations.

3. Designate the resource area "open" for ORV use except for 160 acres in the Ruby Marsh Campground SRMA, where use would be "limited" to designated roads and trails.

4. Withdraw 160 acres at the Ruby Marsh Campground SRMA from mineral entry.

5. Continue to extensively manage the remainder of the Wells RA for dispersed recreation.

Long-Term Management Action: (see Map 2-1). Manage Crittenden Reservior (if land around the reservoir can be acquired through exchange) as a RAMC. Develop new facilities at this site.

ISSUE 5: WILDERNESS

Objective: To manage as wilderness those portions of the WSAs which are manageable as a wilderness area and for which wilderness is considered the best use of the lands.

Short-Term Management Actions: (see Maps 2-3 to 2-6)

1. Recommend portions of the four WSAs totalling 159,881 acres as preliminarily suitable for wilderness designation.

2. Recommend portions of the four WSAs totalling 16,070 acres as nonsuitable for wilderness designation. These include lands which do not meet

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	48,308	7,357
Goshute Peak	65,585	4,185
South Pequop	37,573	3,517
Bad Lands	8,415	1,011
TOTAL	159,881	16,070

the size criterion, are unnatural, are unmanageable as wilderness, involve existing rights-of-way, and are rated by the GEM Assessment as having high energy and/or mineral potential. (Bureau of Land Management 1983).

ISSUE 6: LIVESTOCK GRAZING

Objective: To provide for livestock grazing consistent with other resource uses resulting in an increase in AUMs from the three to five year average licensed use of 288,934 AUMs of 4,912 to a level of 293,846. This would be 1.7 percent over the three to five year licensed use and 23 percent below preference.

Short-Term Management Actions:

1. Seed 35,500 acres, excluding areas identified for disposal under the various land laws, to provide for spring forage and allow natural recovery of the native range. Prescribe burn (without seeding) 27,000 acres and spray (without seeding) 1,500 acres where understory is adequate to provide natural revegetation.

2. Construct 265 miles of fence, drill 65 wells, construct 5 reservoirs, develop 30 springs, and install 80 miles of pipeline to improve livestock distribution and utilization of vegetation.

3. Develop activity plans and grazing systems on Category I allotments and grazing systems as needed on Category M and C allotments to allow for natural recovery of range condition while considering multiple use values.

Long-Term Management Action: Monitor and adjust grazing management systems and livestock numbers as required.

ISSUE 7: WILD HORSES

Objective: To continue management of the six existing wild horse herds (see Map 3-4) consistent with other resource uses.

Short and Long-Term Management Actions:

1. Continue to monitor wild horse populations and habitat conditions.

2. Conduct wild horse gatherings as necessary and allow wild horse populations to increase so as to maintain populations within a range from 557 to 692 animals. The Toano Herd would be maintained at 20 animals.

3. Construct six water development projects

(catchment type) with a storage tank and trough.

4. Remove wild horses from private lands if required.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

Objective: 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.

Short-Term Management Actions:

1. Modify 475 miles of existing fences within crucial and 175 miles within noncrucial big game habitats that do not meet Bureau specifications.

2. Protect, enhance, and/or develop 250 spring sources for their wildlife values.

3. Designate and manage 6,200 acres as the Salt Lake ACEC to protect and enhance peregrine falcon habitat (see Map 2-10).

Short and Long-Term Management Actions:

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 only essential and crucial wildlife habitats.

3. Improve habitat in areas identified as potential reintroduction sites for native species, of wildlife as previously identified by NDOW. Prior to improvement of bighorn sheep habitat in the Spruce/Goshutes and Pilot/Crittenden RCAs, further study of conflicts between bighorn and domestic sheep will be undertaken in cooperation with 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. Identify, in coordination with woodland products management, about 50,000 acres of crucial deer winter habitat for improvement.

7. Apply time of year restrictions on leaseable and/or saleable mineral development to protect crucial deer winter range and sage grouse strutting and nesting habitats.

ISSUE 9: RIPARIAN/STREAM HABITAT

Objective: To improve high and medium priority riparian/stream habitat to at least a good condition and prevent undue degradation of all riparian/stream habitat due to other uses.

Short-Term Management Action: Improve 1,007 acres/38.2 miles of deteriorated high and medium priority riparian/stream habitat using techniques which would result in a minimum improvement of 30 percent of its habitat condition within the short-term.

Long-Term Management Actions:

1. Improve an additional 1,511 acres/57.3 miles of deteriorated high and medium priority riparian/stream habitat using techniques with results described above.

2. Manage nondeteriorated areas to prevent a decline to less than good condition.

3. Manage new road construction and mining activities within riparian zones.

ISSUE 10: WOODLAND PRODUCTS

Objective: To achieve a sustained yield of woodland products and provide as wide a variety of products and services as possible to both the general public and commercial users.

Short and Long-Term Management Actions:

1. Implement intensive management of Christmas tree cutting on the entire 600,000 to 700,000 acres of woodlands.

2. Using the sustained yield concept, implement management of fuelwood harvesting to meet the present annual demand of approximately 1,300 cords. Open additional live and dead fuelwood

post harvesting areas to meet both increasing general public and commercial demands.

3. Manage salvage cuts for both the general public and commercal users on areas where pinyon pine-juniper conversions for wildlife or livestock management enhancement would occur.

4. In coordination with terrestrial wildlife management, promote the sale and harvest of 75 percent canopy cover removal of woodland products on about 50,000 acres of crucial deer winter habitat.

5. Open pinyon pine ranges that have a good or better seedling to mature tree ratio to pinenut collecting.

6. Implement techniques such as fire management and harvesting practices to rejuvenate deteriorating aspen stands.

TABLE 2-5

MANAGEMENT ACTIONS OF THE PREFERRED ALTERNATIVE

ISSUE/Action	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Identify for disposal, primarily by public sale	NA	9310 acres, including 6110 acres for community expansion of West Wendover	NA	2945 acres for community expansion of Jackpot	NA	72,245 acres for community expansion of Montello	590 acres for community expansion of Wells	8060 acres, including 380 acres for community expansion of Wells	93,150 Acres
CORRIDORS: Designate and/or identify miles of corridor	37	229	36	57	NA	50	112	45	566 Miles
ACCESS: Acquire legal public access for	NA	BLM Road # 1018, 1024, 1034, 1049, 1054, 1060, 1061, 1062, 1269, 1270, 1286	BLM Road # 1064, 1069, 1096, 1275	1097, 1099, 1107, 1108, 1123, 1203, 1223, 1274, 1285 & extension at Twin Meadows	BLM Road # 1109, 1136	BLM Road # 1071, 1101 1137	8LM Road # 1076, 1081 1082, 1272	8LM Road # 1037	35 Roads
		40 Miles	5 Miles	29 Miles	4 Miles	19 Miles	34 Miles	7 Miles	138 Miles
ORV designation	Open	Open	Open	Open	Open	Open	Open	Open except 160 acres limited	Open except 160 acres limited
RECREATION: Manage recreation use and/ or develop facilities at	NA	NA	Tabor Creek: Manage 600 acres, picnic tables, BBQ grills, vehicle pads Mary's River: Primitive development	Salmon Falls Creek: Manage 16 river miles, restrooms, registration boxes, signs	NA	Crittenden Reservoir; (if acquired) Parking area, restroom	NA	Ruby Marsh Campground: Manage & w/ draw from mineral entry 160 acres, gates, fence, replace firegrates	Manage 5 recreation areas
WILDERNESS: Suitable Acres	NA	Bluebell 48,308; Goshute Peak 65,585; South Pequop 37,573	NA	Bad Lands 8415	NA	NA	NA	NA	159,881 Acres in 4 Areas
Nonsuitable Acres	NA	Bluebell 7357; Goshute Peak 4185; South Pequop 3517	NA	Bad Lands 1011	NA	NA	NA	NA	16,070 Acres in 4 Areas
LIVESTOCK GRAZING:									
Seed acres	7000	8000		10,000	4000		2000	4500	35,500 Acres
Prescribe burn acres w/o seeding			7000	3,500	6000	10,500			27,000 Acres
Construct miles of fence	30	80	27	53	21	34	10	10	265 Miles
Drill wells	13	10	11	6	6	9	6	4	65 Wells
Develop springs	2		9	2	10	5	2		30 Springs
Install miles of pipeline	7	10	2	16	15	15		15	80 Miles
Construct reservoirs			5						5 Reservoirs
					Spray 1500 acres w/o seeding				Spray 1500 acres w/o seeding
WILD HORSES: Maintain numbers between	195 to 244 in Maverick-Medicine; 51 to 64 in Cherry Creek Herds	131 to 164 in Antelope Valley; 96 to 120 in Goshutes; 64 to 80 in Spruce-Pequop; & 20 in Toano Herds	NA	NA	NA	NA	NA	NA	Maintain numbers between 557 to 692 in 6 herds
Construct water developments	2	4	NA	NA	NA	NA	NA	NA	Construct 6 water developments
TERRESTRIAL WILDLIFE HABITAT:									
Modify miles of fence	50	100	100	150	100	50	50	50	650 Miles
Protect springs	25	25	50	50	25	25	25	25	250 Springs
Identify acres of crucial deer winter range for improvement	10,000	35,000	NA	NA	NA	NA	NA	5000	50,000 Acres
Acres of ACEC	NA	6,200	NA	NA	NA	NA	NA	NA	6,200 Acres
Improve habitat of	None	Peregrine falcon	None	Potential bighorn sheep	NA	None	NA	None	Improve habitats of peregrine falcon & potential bighorn sheep
Maintain habitat of	Bald eagle	Bald eagle & bighorn sheep	Peregrine falcon	None	NA	Peregrine falcon & bighorn sheep	NA	Bald eagle	Maintain habitats of bald eagle, peregrine falcon, & bighorn sheep
RIPARIAN/STREAM HABITAT: Improve miles of stream	10.0	NA	26.2	54.9	4.4	NA	0	NA	95.5 Miles
Improve acres of riparian	79	NA	505	1905	29	NA	0	NA	2518 Acres
WOODLAND PRODUCTS: Intensive management of harvesting	Christmas trees & fuelwood	Christmas trees & fuelwood	NA	NA	Fuelwood	Christmas trees & fuelwood	NA	Christmas trees & fuelwood	Christmas trees & fuelwood (1300 cords per year)
Crown canopy removal limitations	75%	75%	NA	NA	75%	75%	NA	75%	75%

IMPLEMENTATION

There are three major decision levels in the Bureau planning system:

1. Policy Level - national policy and program development guidance, supplemented by State Director guidance, constitutes this policy level.

2. Resource Management Plan (RMP) Level - multiple use management decisions for a defined geographic area are made.

3. Activity or Plan Implementation Level - detailed, site-specific management actions are developed. Activity plans include wildlife habitat management plans (HMPs), allotment management plans (AMPs), recreation area management plans (RAMPs), and wilderness management plans.

Implementation of the resource management plan will take place through monitoring, consultation, and coordination. Coordinated Resource Management and Planning (CRMP) is an advisory process that brings together all interests concerned with the management of resources in a given local area; landowners, land management agencies, wildlife groups, wild horse groups, and conservation organizations and is the recommended public process through which consultation and coordination will take place. Grazing adjustments, if required, will be based upon reliable vegetation monitoring studies, consultation and coordination, baseline inventory, or a combination of these.

Selective Management Criteria for Livestock Grazing

To implement any of the alternatives (except for no action) a grazing management program will be proposed to improve or maintain the public land resources through a selective management approach to rangeland management. This approach is based on the concept that an allotment's resource characteristics, management needs, and potential for improvement can be identified and the timing and intensity of the management actions should be varied according to an allotment's identified needs and potential. The purpose of the proposed grazing management program is identified by the following general objectives:

1. Authorize livestock grazing of the public rangelands under the principles of multiple use and sustained yield.
2. Protect, maintain, and improve the rangeland resources through sound land use and grazing management decisions.

3. Conduct the level of soil and vegetation inventories necessary to support management decisions and provide a baseline for monitoring programs.

4. Increase and encourage systematic cooperation, consultation, and coordination with rangeland users and intermingled landowners as part of the land use and grazing management decision making process.

5. Monitor rangeland resources and livestock use to assist in determining proper stocking levels and measure progress toward achieving management objectives.

6. Determine appropriate stocking levels (including proper season and area of use) based on monitoring data and authorize livestock grazing consistent with those stocking levels.

7. Initiate cost effective rangeland improvements that will help improve the condition of the lands for livestock grazing, wildlife habitat, wild horses and watershed protection.

To facilitate the selective management approach, BLM has developed three categories into which allotments are grouped according to their potential: maintain (M), improve (I), and custodial (C). Objectives for these categories are to: (1) maintain current satisfactory condition, (2) improve current unsatisfactory condition, and (3) manage custodially while protecting existing resource values. The following characteristics pertain to the three categories, although allotments within each category will not have to meet all the criteria to be managed according to the category objectives:

Category M Allotment Characteristics

1. Existing range improvements are adequate or essentially so. The primary concern is with maintaining existing projects.

2. The potential is moderate to high for a positive economic return on public investment for potential new range improvements and vegetative manipulations. Investment is cost effective.

3. There are resource conflicts but they can be corrected with minimal effort.

4. The land ownership objective is to maintain its present state.

5. Livestock distribution is good. All areas are being used proportionately. The current level of use by all grazing animals is satisfactory.

6. The present activity plan if implemented is acceptable or generally acceptable as it exists. Minor modifications to resolve resource conflicts may be required. No physical problems exist to prevent the implementation of a a new plan at the present time (if one is required).

7. The current ecological range and watershed condition is satisfactory. The primary concern is with maintaining existing conditions that are static or improving. The average climax potential is moderate to high.

Category I Allotment Characteristics

1. Existing range improvements are inadequate. Redesign and/or removal of existing projects and development of new ones is required.

2. The potential is moderate to high for a positive economic return on public investment for potential new range improvements and vegetative manipulations. There is potential for high cost effectiveness.

3. There are one or more major resource conflicts present and they are responsive to or correctible through management.

4. The land ownership objective states that when called for in the planning system, the public lands will be retained/consolidated to meet future management goals.

5. Livestock distribution is poor to fair. Not all of the areas are being used proportionately. The current level of use by all grazing animals may exceed what the resource can support.

6. The present activity plan, if implemented, is deficient and requires modification to resolve resource conflicts such as range improvements. There are physical problems that inhibit implementation of a new plan at the present time if one is required.

7. The current ecological range and watershed condition is unsatisfactory. The primary concern is with stabilizing any downward trends and improving them where cost effective. The average climax potential is moderate to high.

Category C Allotment Characteristics

1. Due to management objectives, existing range improvement projects will be maintained or removed with no new projects planned.

2. The potential is low or zero for a positive economic return on public investment for potential new range improvements and vegetative manipulations.

3. Due to management objectives, resource conflicts are minor or not an issue.

4. The land ownership objective states that when required by the planning system, allotments containing a majority of public lands which have been identified for disposal, will have these Federal lands disposed of by exchange, sale or other appropriate land laws.

5. Livestock distribution is poor to good. All areas with the potential for use may or may not be used proportionately. The current levels of use by all grazing animals may or may not be satisfactory.

6. The present activity plan if implemented, should remain as exists unless minor modifications to resolve resource conflicts are required. Resource objectives inhibit new activity plan implementation.

7. The present ecological range and watershed condition is not a factor. The average climax potential is low to moderate.

Specific Implementation Procedures

After publication of the Final RMP/EIS and categorization of allotments using the selective management criteria, implementation actions by category would generally be prioritized as shown on Table 2-6. Flexibility of livestock operations, as appropriate, would be allowed on all allotments through terms and conditions of permits, leases, and AMPs.

TABLE 2-6

PRIORITY OF IMPLEMENTATION
ACTION BY ALLOTMENT CATEGORY

Implementation Action	Allotment Category	Priority
Fund rangeland improvements with appropriated funds	M	2
	I	1
	C	3
Develop allotment management plans	M	2
	I	1
	C	3
Use supervision	M	3
	I	1
	C	2

Livestock Grazing Treatments

Grazing systems would include one or more of the following treatments in combination.

Treatment 1: Rest from livestock grazing for two consecutive growing seasons (approximately April 1 of one year to August 31 of the following year). Two growing seasons of rest would allow key management species to improve vigor and increase litter accumulation, seed production, and seedling establishment.

Treatment 2: Rest from livestock grazing at least one year in both the spring (April 1 to May 30) and summer (June 1 to August 31) during each three or four year cycle.

Treatment 3: Graze each pasture at some time during each grazing year.

Treatment 4: Graze no pasture more than twice in the same growing season (spring or summer) during any three or four year cycle.

Treatment 5: Graze livestock from midsummer to late fall only (approximately July 16 to November 15), and rest during the spring or summer the following year to improve the vigor, density, and reproduction of key grass species.

Treatment 6: Provide rest from livestock grazing for two years until seedlings are established or until it is determined that a vegetation manipulation or recovery project is unsuccessful. This treatment provides the protection necessary for establishment or recovery of key management species following wildfire, prescribed burning, and seeding or spraying projects.

Treatment 7: Defer livestock grazing from early spring to midsummer each year (approximately April 1 to June 30). Improved vigor and reproduction for key management species in each allotment would result.

Treatment 8: Allow grazing on winterfat/Nutall saltbush up to 80 percent utilization during the dormant period (approximately November 1 to March 1), and rest from grazing March 1 to October 31 each year. This treatment would not apply to the Mary's River, O'Neil/Salmon Falls, and Goose Creek RCAs.

Estimated Cost of Implementation

Cost of implementation is difficult to determine, given the fact that information on miles of fence, acres of seeding, and number of water developments is somewhat conjectural at this point. Nonetheless, costs of implementation for each alternative have been estimated, using the best information currently available. These costs are presented in Table 2-7.

TABLE 2-7

IMPLEMENTATION COSTS BY ALTERNATIVE

	No Action	Resource Production	Midrange	Resource Protection	Preferred
Recreation Development	0	$ 20,800	$ 26,300	$ 5,500	$ 30,000
Livestock Grazing Improvements	0	$9,031,074	$2,284,650	$1,564,650	$2,381,500
Wild Horse Improvements	0	$ 45,000	$ 90,000	$ 90,000	$ 90,000
Wildlife Habitat Improvements	0	$ 142,500	$1,164,000	$1,417,000	$1,509,000
Riparian Improvement	0	$ 350,000	$ 585,000	$ 625,000	$ 585,000
	0	$9,589,374	$4,149,950	$3,702,150	$4,595,500

NOTE: These costs are for labor and materials only. They do not include BLM overhead costs for environmental assessment preparation, contract preparation, and supervision.

MONITORING

The vegetation monitoring system being used includes measurement of utilization, actual use, climate, and range condition and trend. Monitoring was initiated in 1981 in the Wells RA so that initial livestock stocking rates could be determined by 1984 and adjusted later as more data becomes available. Monitoring methods include:

Utilization: BLM uses the Key Forage Plant Method — an occular estimate for judging utilization of key species by weight. In this method, the examiner divides noticeable utilization among six classes of use within a key management area; no-use (0 percent), slight (1-20 percent), light (21-40 percent), moderate (41-60 percent), heavy (61-80 percent), and severe (81-100 percent). Grazing areas would be managed for an annual utilization of 55 percent for perennial grasses and forbs and 45 percent for shrubs.

Actual Use: Livestock operators would provide records of actual livestock use. Use of the range by wild horses would be determined through census figures, with refinement made by season-of-use data as necessary. Actual use and season of use by big game animals is determined in cooperation with NDOW.

Climatic Data: Annual precipitation and length of growing season have a marked influence on seasonal vegetation growth and production. Official weather stations, and BLM and Nevada State climatic stations would provide the climatic data. This data would be used to correlate seasonal weather to plant growth throughout the resource area as determined in the utilization and trend studies.

Condition and Trend: Condition of a range site is determined by comparing composition by air-dry weight of the present plant association with that of the site's climax plant community. Trend is the direction of change in condition of the range observed over time. Changes in trend are cate-

gorized as upward, downward, or not apparent, and from three to five years of observation are needed before any trend can be detected on most range sites. Trend is measured by using several methods, primarily by noting changes in the frequency of key species in key areas over time, using the Quadrat Frequency Method. For more detailed information on these monitoring procedures, refer to the 1981 Final Nevada Range Monitoring Procedures and the draft Bureau Monitoring Studies Manual (Bureau of Land Management 1981b).

The monitoring program for those allotments in the M and C categories would be of low intensity. For the I category allotments, monitoring intensity would be variable, focusing on the effects of management actions on range condition.

The monitoring program, along with input through CRMP, would determine the time at which range management action would be needed in a particular allotment. A partial list of possible actions includes change in livestock season of use, construction of fence, water development, vegetation removal (chaining, controlled burns) and reseeding, and livestock adjustment. The monitoring program would be an integral part of all the alternatives analyzed in this EIS except the No Action Alternative.

Additional monitoring would be conducted in crucial wildlife and wild horse areas. Information gained through these efforts and other studies would be used in making any grazing decisions.

STANDARD OPERATING PROCEDURES

Certain requirements are inherent in the implementation of any Federal action on Bureau managed land. These requirements, or Standard Operating Procedures, are designed to mitigate impacts stemming from management objectives or the construction of support facilities necessary to implement any Federal act.

The following will be applied to any action resulting from the planning system. These requirements will be part of the standard analysis process.

1. Environmental assessment will be made before project development so that, depending on impact, modification or abandonment of the project may be considered.

2. Threatened or endangered plant or animal species clearance is required before implementation of any project. Consultation with the U.S. Fish and Wildlife Service as required by Section 7 of the Endangered Species Act is necessary if a threatened or endangered species or their habitat may be impacted. If it is determined that adverse impacts will occur, either special design, relocation, or abandonment of the project will follow.

3. According to sections 201 and 202 of the FLPMA, ACEC will receive priority designation and protection during the land use planning process.

4. Cultural resource protection requires compliance with Section 106 of the National Historic Preservation Act of 1966, Section 2(b) of Executive Order 11593, and Section 101(b)(4) of the National Environmental Policy Act (NEPA) of 1969. Prior to project approval, intensive field (Class III) inventories will be conducted in specific areas that would be impacted by implementing activities. If cultural or paleontological sites are found, every effort will be made to avoid adverse impacts. However, where that is not possible, BLM will consult with the State Historic Preservation Officer and the Advisory Council on Historic Preservation, in accordance with the Programmatic Memorandum of Agreement by and between the Bureau and the Council dated January 14, 1980. This agreement sets forth a procedure for developing appropriate measures to mitigate the impact of adverse effects.

5. Visual resource management requires all actions to be in compliance with BLM Visual Resource Management Design Procedures in BLM Manual 8400. On any project which has a visual contrast rating that exceeds the recommended maximum for the visual class zone in which it is proposed, the visual contrasts will be considered significant and mitigating measures must be examined. The decision as to whether mitigating measures must be implemented rests with the District Manager and will be made on a project-by-project basis.

6. Prior to development of water wells by BLM, a detailed hydrological study to determine ground water availability will be required.

7. Physiological requirements for the management of different vegetation types will be determined by BLM based on the best available scientific information. Methods of management to meet these requirements will be determined through consultation, coordination, cooperation and public involvement. The preferred method to accomplish this consultation and coordination is

through the Coordinated Resource Management and Planning (CRMP) Process.

8. Soils inventories will be completed prior to planning vegetation type conversions to determine land treatment feasibility.

9. Alteration of sagebrush areas either through application of herbicides, prescribed burning, or by mechanical means will be in accordance with procedures specified in the Western State's Sage Grouse Guidelines, the Memorandum of Understanding between the Nevada Department of Wildlife and Bureau of Land Management (Autenrieth et al. 1982, Braun et al. 1977), as amended, and as future studies might dictate.

10. Vegetative conversions that use herbicides will be accomplished in accordance with Washington Office Instruction Memorandum 81-135 and BLM Department Manual 517 with regard to safety and application.

11. Fire management plans will be developed before any prescribed burning occurs.

12. Minimal clearing of vegetation will be accomplished on project sites requiring excavation.

13. Disturbed areas, capable of producing vegetation, will be reseeded to prevent erosion and replace ground cover.

14. Project area cleanup will be accomplished by removing all refuse to a sanitary landfill.

15. Unless otherwise stated all lands will be retained and administered for multiple use, including consolidation of high resource value lands primarily through exchange as shown on Map 2-7.

16. Off-road vehicle designations will be implemented to: 1) protect significant cultural or natural features, T&E species, or wilderness suitability of WSAs; 2) reduce harassment of wildlife or damage to wildlife habitat; and 3) where extreme natural or man-made hazards to human life or property exist.

17. Compliance with wilderness directives on proposed projects will be in accordance with Section 603(a) of the FLPMA, which provides that until Congress acts on WSAs the following policy shall prevail: Existing multiple-use activities, including grazing, will continue, but new or expanded existing uses will be allowed only if the impacts would not impair the area's suitability for designation as wilderness. Proposed uses and projects will be analyzed on a case-by-case basis to assure compliance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (Bureau of Land Management 1979a). After designation, proposed projects would be in compliance with the wilderness management plan developed for the area and in accordance with the Wilderness Management Policy (Bureau of Land Management 1981a).

18. Livestock grazing use will continue to be licensed at present levels. Monitoring studies will be conducted on allotments until sufficient data has been obtained. Livestock stocking levels may be adjusted either upward or downward depending on the findings of these studies. Monitoring will be in accordance with the 1981 Nevada Range Monitoring Procedures compiled by the Nevada Range Studies Task Group. All studies will be coordinated through the range users.

19. Deferment of livestock use will be in effect for a minimum of two growing seasons following brush control projects so vegetation may be re-established.

20. Excess wild horses will be removed from public lands and given to individuals and organizations in accordance with the Wild and Free Roaming Horse and Burro Act of 1971, as amended.

21. Historically, about a two percent death loss of animals can be expected during gathering operations of wild horses.

22. Crested wheatgrass seedings will not be located in crucial big game habitats.

23. Water for wildlife is to be made available in allotments, rested pastures, and in areas used by wild horses whenever feasible.

24. Spring developments will be fenced to prevent overgrazing and trampling of adjacent vegetation and to provide escape areas for small wildlife. Water at these spring developments will be maintained at the source.

25. All livestock water improvement sites will have wildlife escape devices (bird ramps) in watering troughs, lateral watering sites off

pipelines, and the overlow piped away from the last trough so as to provide water at ground level for wildlife.

26. Fence construction must comply with BLM Manual 1737. Lay-down fences will be constructed in wildlife and wild horse areas if necessary and feasible. Fences in wild horse areas will contrast enough with surroundings so as to be visible to horses and will have at least one gate installed per mile and at every corner.

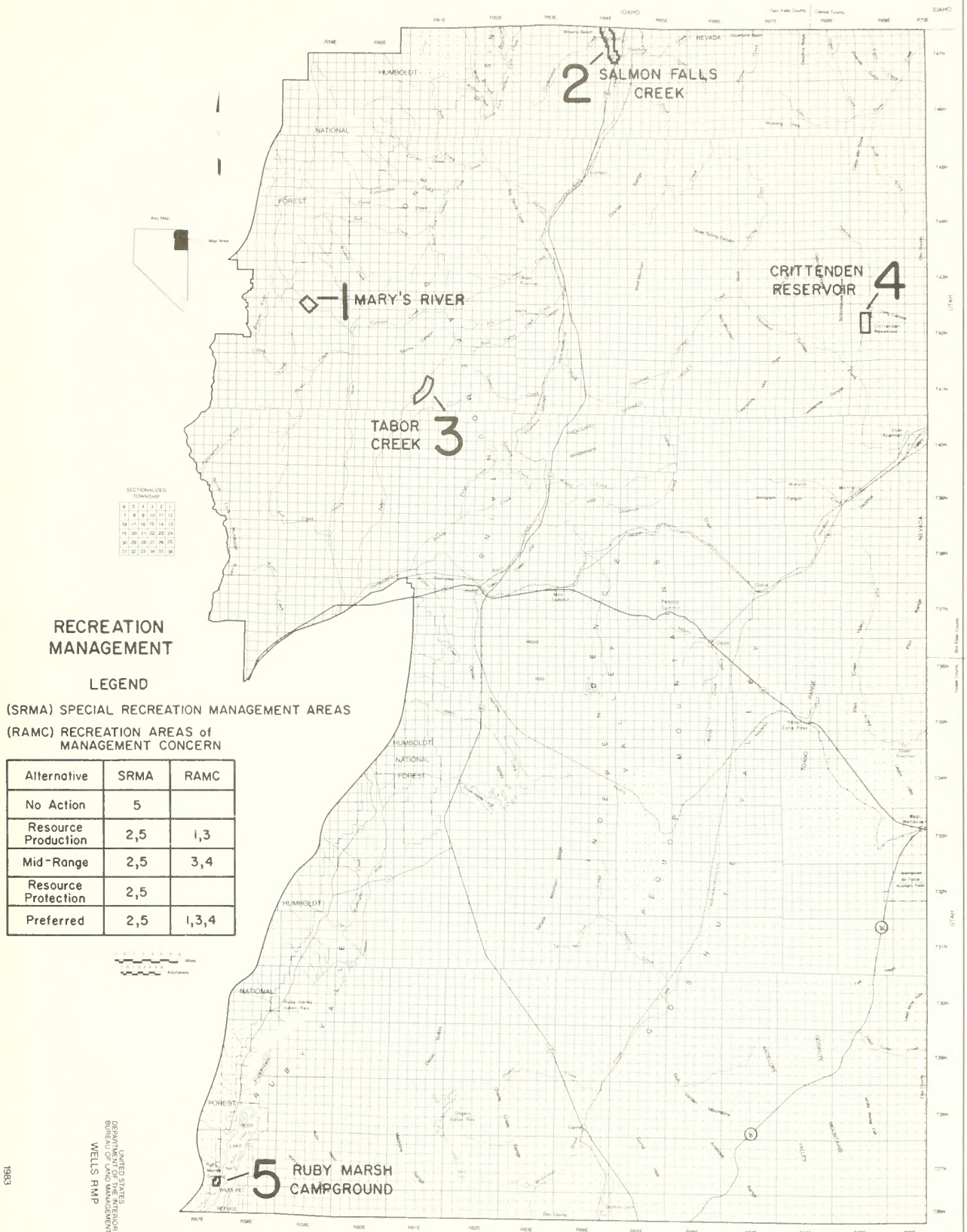
27. Time of day and/or time of year restrictions will be placed on construction activities associated with transmission and utility facilities and leasable and salable mineral exploration and/or development that are in the immediate vicinity or would cross crucial sage grouse, crucial deer and pronghorn antelope winter habitats, antelope kidding areas, or raptor nesting areas.

28. Active raptor nests adjacent to areas proposed for vegetation manipulation will be protected. On-the-ground work will be confined to the period preceding nesting activity or after the young have fledged (left the nest). Areas containing suitable nesting habitat will be inventoried for active raptor nests prior to initiation of any project.

29. Vegetation manipulation that would alter the potential natural plant composition will not be allowed in riparian areas. For the purpose of riparian management, crested wheatgrass is not considered a native species.

30. Emphasis will be placed on the management of browse on crucial mule deer winter range.

31. Proposed seedings for livestock management will be composed primarily of crested wheatgrass although other species, including grasses, forbs and shrubs, may be included on a case-by-case basis.



RECREATION MANAGEMENT

LEGEND

(SRMA) SPECIAL RECREATION MANAGEMENT AREAS

(RAMC) RECREATION AREAS of MANAGEMENT CONCERN

Alternative	SRMA	RAMC
No Action	5	
Resource Production	2,5	1,3
Mid-Range	2,5	3,4
Resource Protection	2,5	
Preferred	2,5	1,3,4

UNITED STATES DEPARTMENT OF THE INTERIOR
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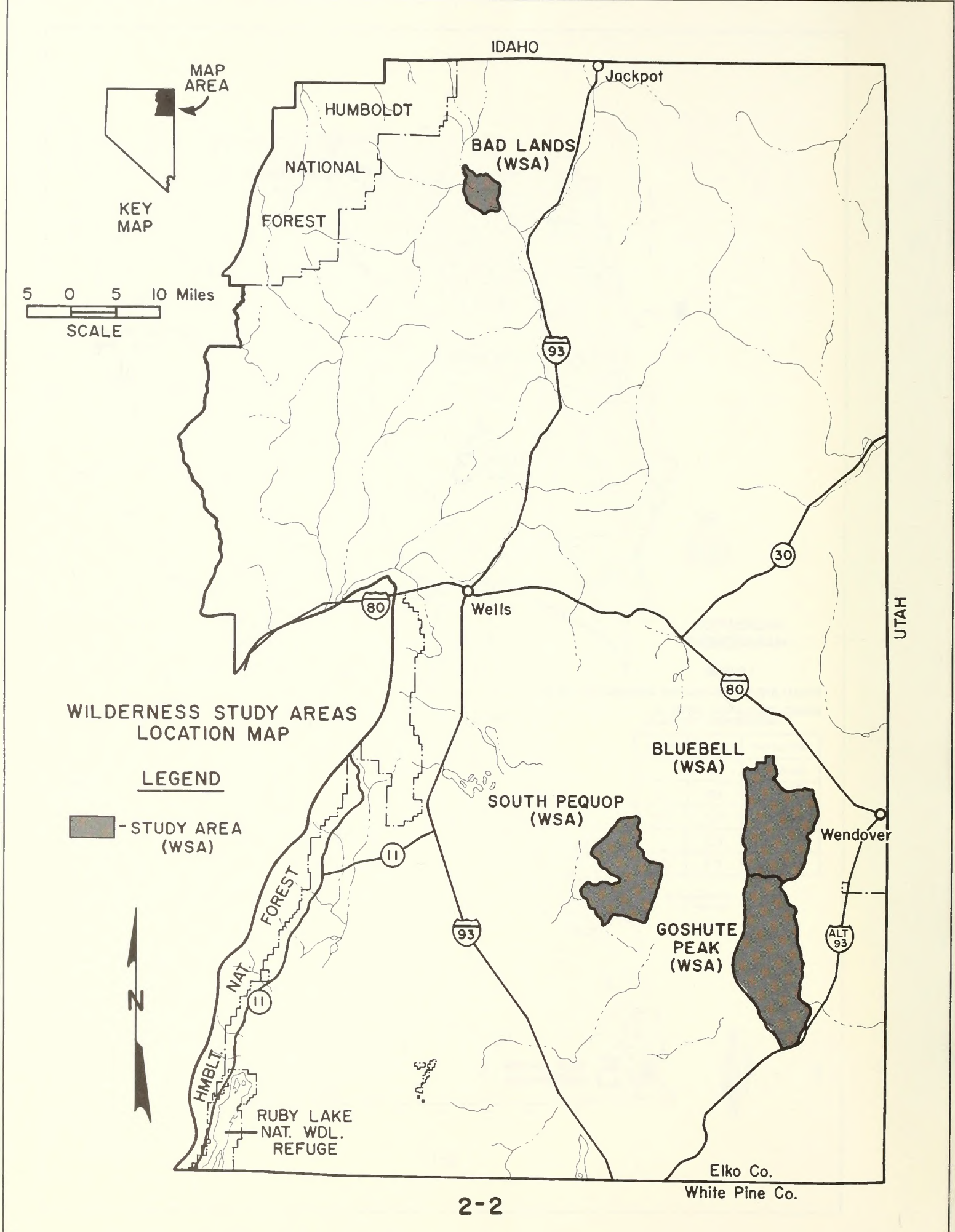
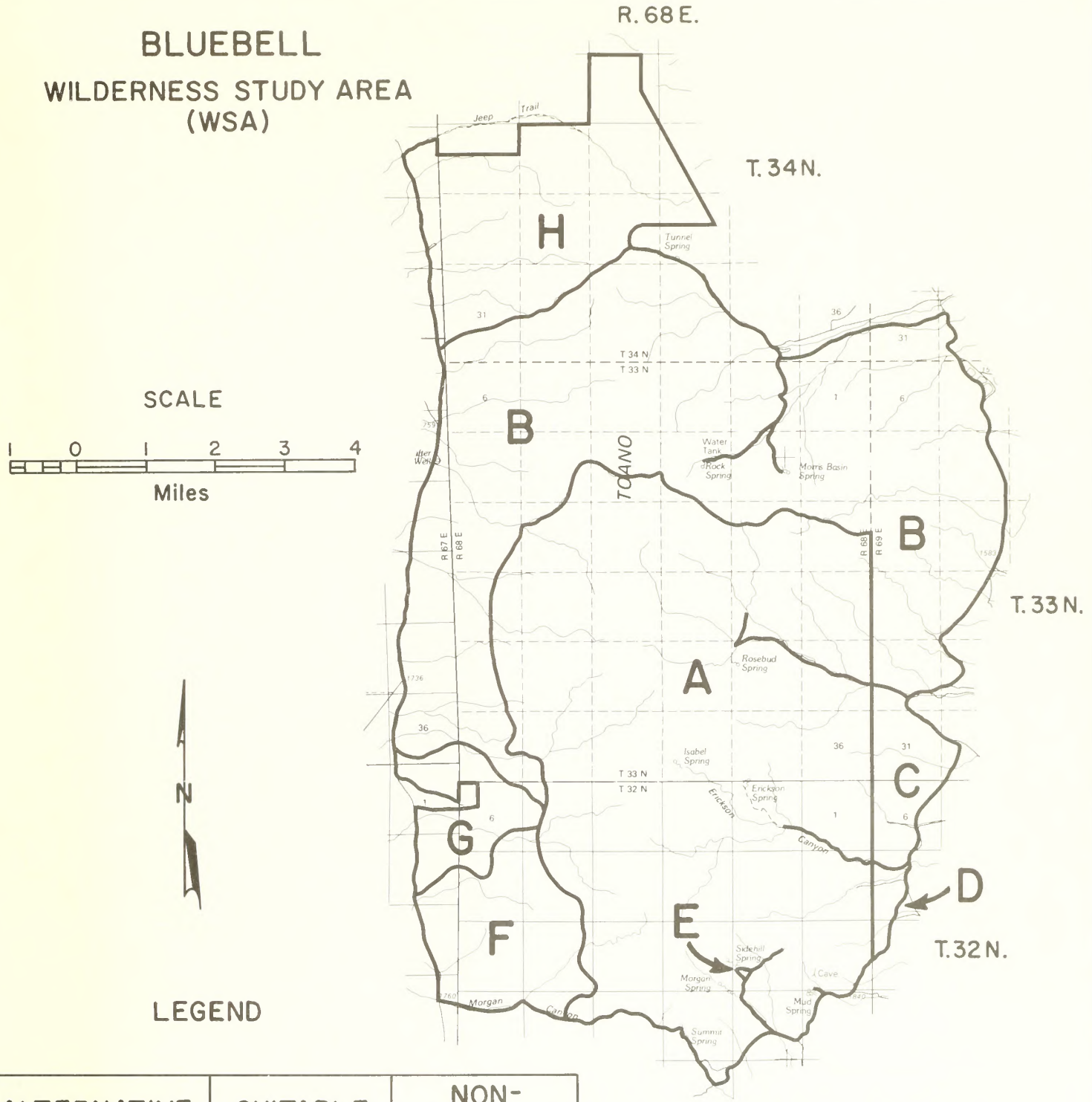
WELLS RMP

1983


IDAHO
MAP AREA
KEY MAP
HUMBOLDT
NATIONAL
FOREST
BAD LANDS (WSA)
Jackpot
5 0 5 10 Miles
SCALE
93
80
Wells
30
UTAH
WILDERNESS STUDY AREAS LOCATION MAP
LEGEND
STUDY AREA (WSA)
BLUEBELL (WSA)
SOUTH PEQUOP (WSA)
Wendover
GOSHUTE PEAK (WSA)
ALT 93
11
HMBLT. NAT. FOREST
N
RUBY LAKE NAT. WDL. REFUGE
Elko Co.
White Pine Co.

BLUEBELL

WILDERNESS STUDY AREA (WSA)

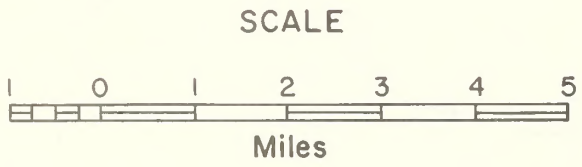


LEGEND

ALTERNATIVE	SUITABLE	NON-SUITABLE
NO ACTION	None	All
RESOURCE PRODUCTION	A	B,C,D,E, F,G,H
MID-RANGE	A,B,C,D, F	E,G,H
RESOURCE PROTECTION	A,B,C,D F,G,H	E
PREFERRED	A,B,C,D, F	E,G,H

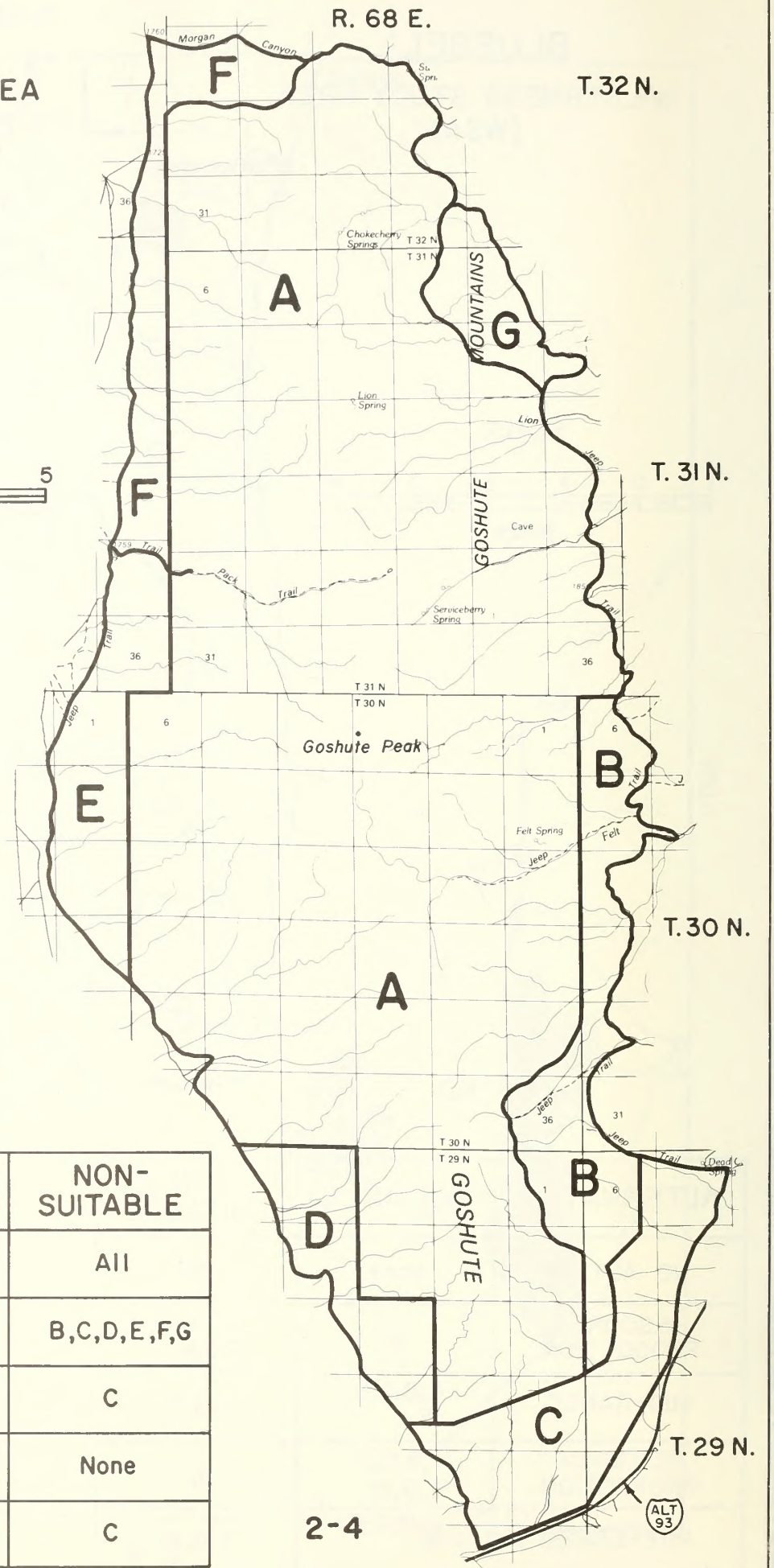
GOSHUTE PEAK

WILDERNESS STUDY AREA (WSA)

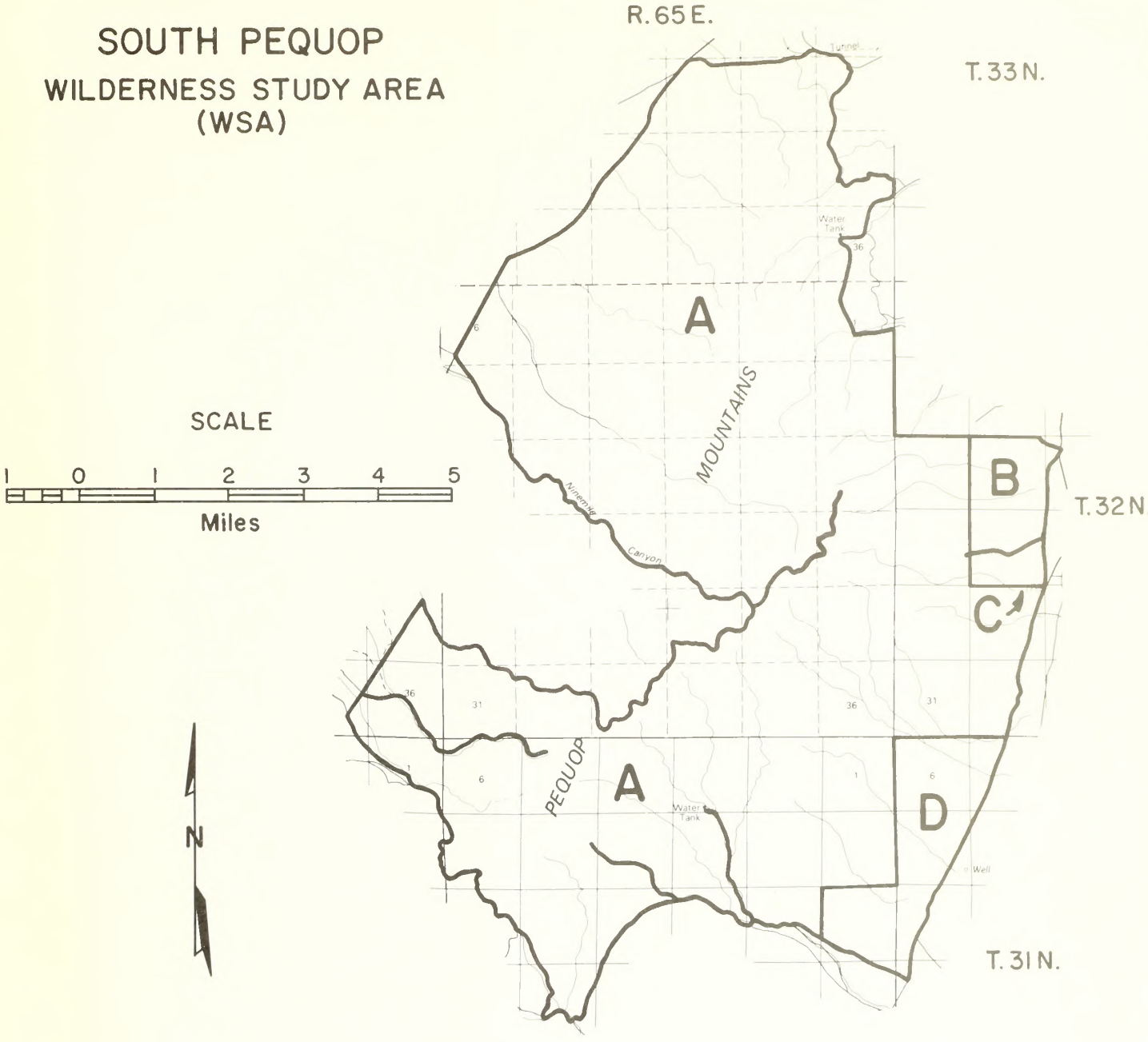


LEGEND

ALTERNATIVE	SUITABLE	NON-SUITABLE
NO ACTION	None	All
RESOURCE PRODUCTION	A	B,C,D,E,F,G
MID-RANGE	A,B,D,E,F,G	C
RESOURCE PROTECTION	All	None
PREFERRED	A,B,D,E,F,G	C



SOUTH PEQUOP
WILDERNESS STUDY AREA (WSA)



LEGEND

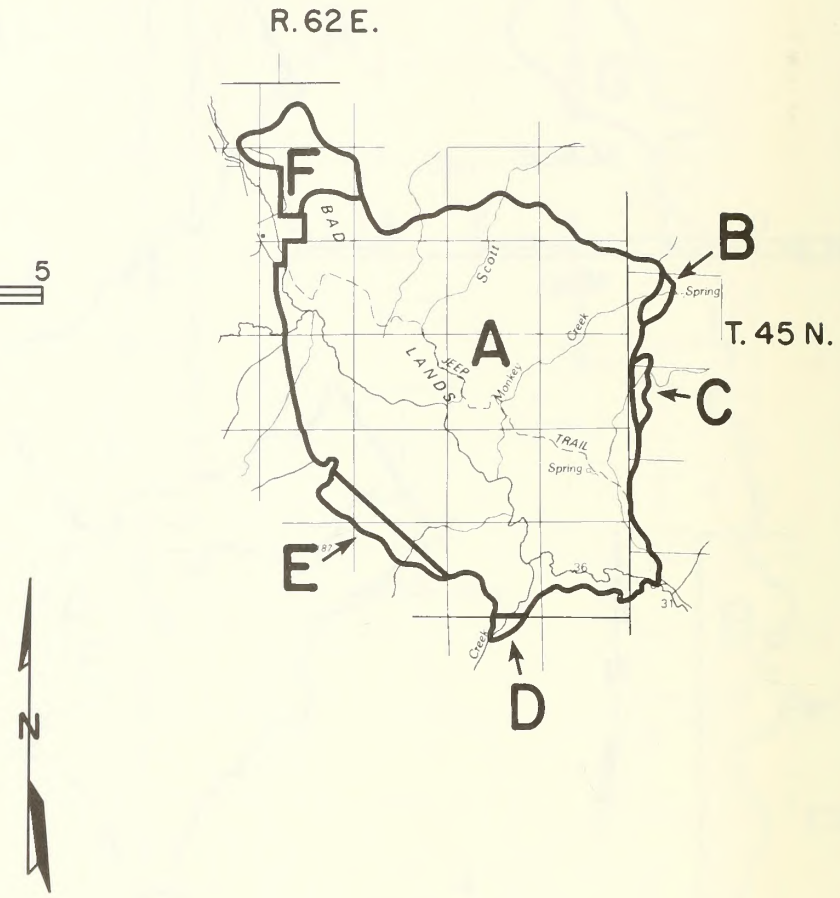
ALTERNATIVE	SUITABLE	NON-SUITABLE
NO ACTION	None	All
RESOURCE PRODUCTION	None	All
MID-RANGE	A	B,C,D
RESOURCE PROTECTION	All	None
PREFERRED	A	B,C,D

BAD LANDS
WILDERNESS STUDY AREA
(WSA)

SCALE

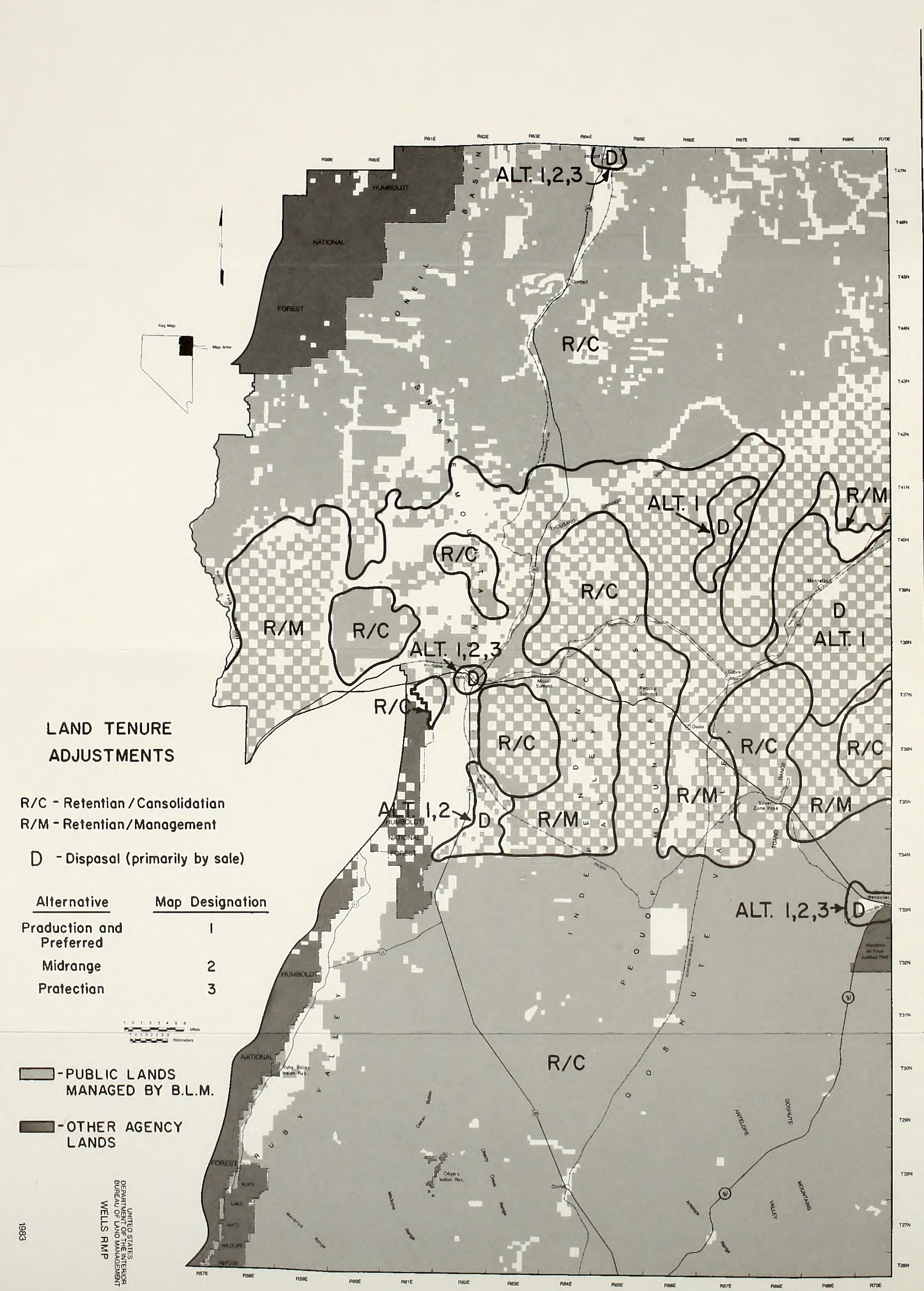
1 0 1 2 3 4 5

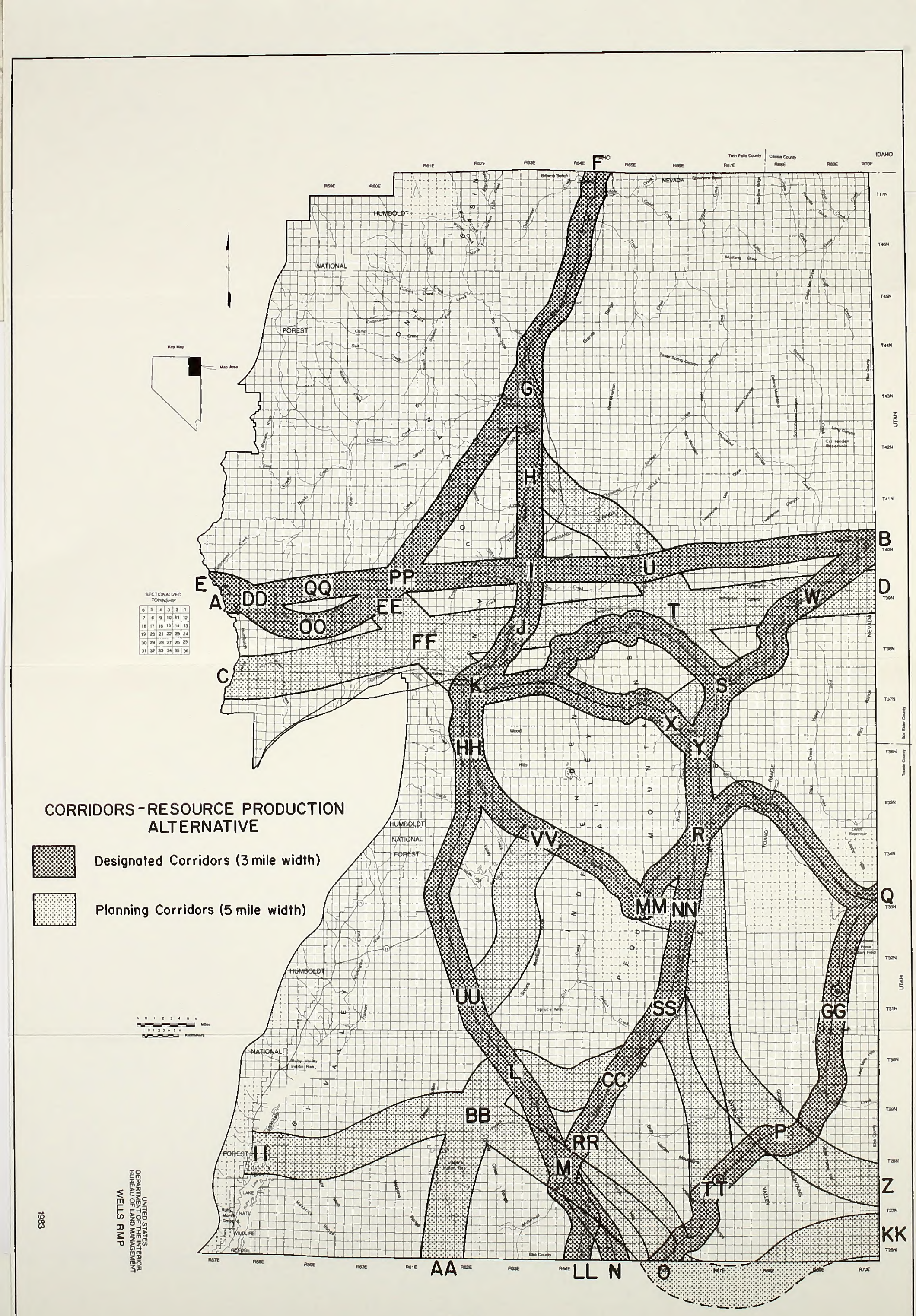
Miles

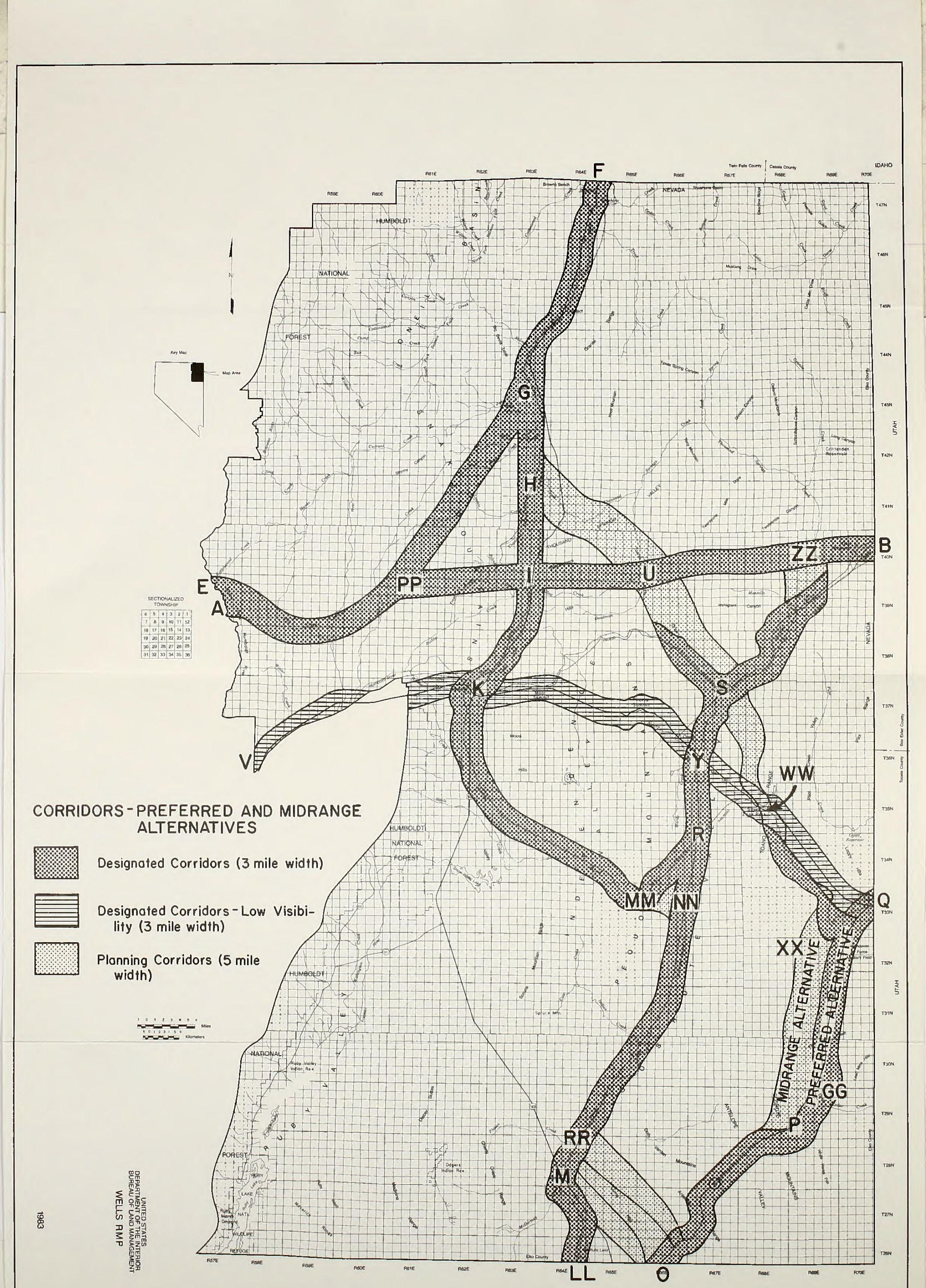


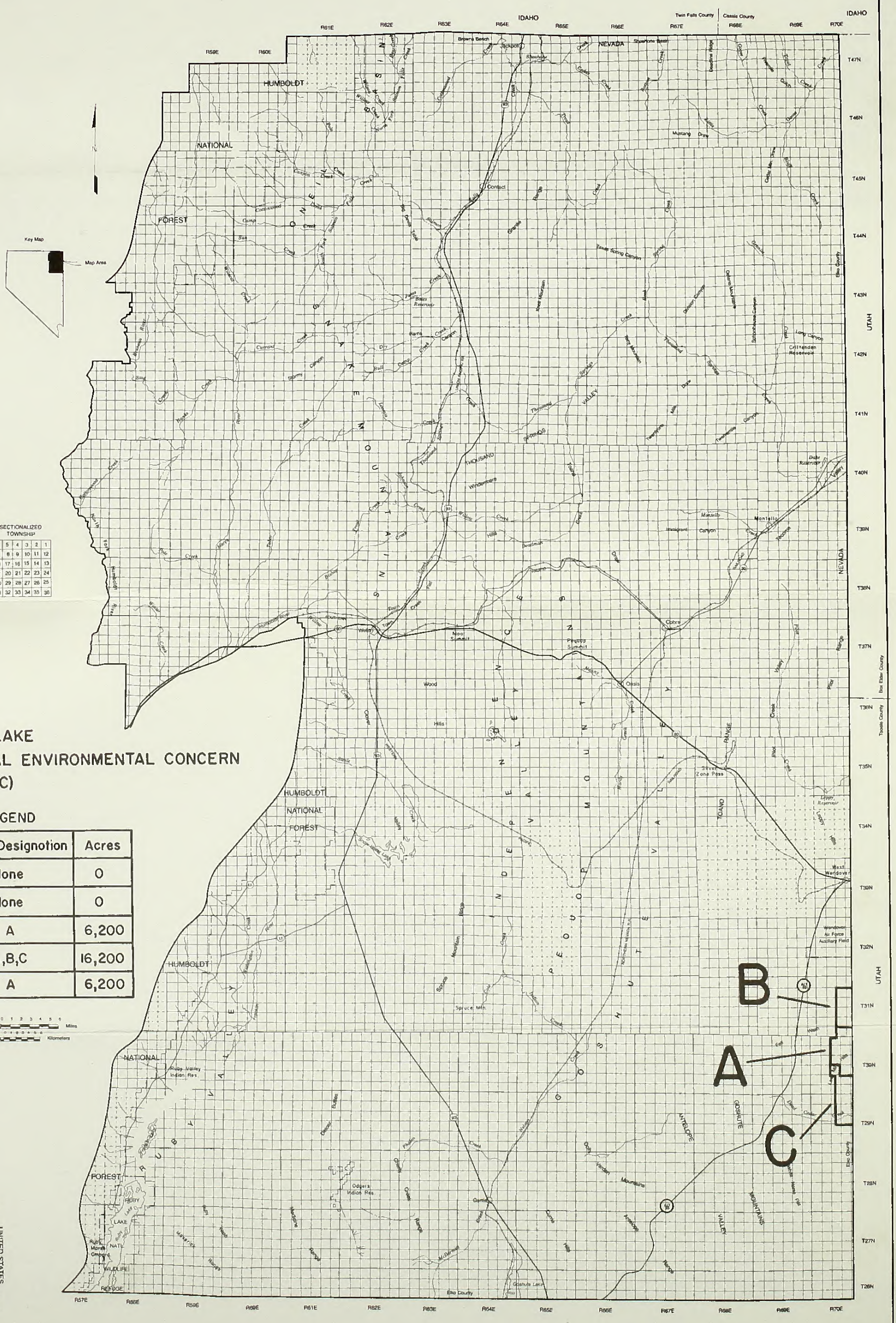
LEGEND

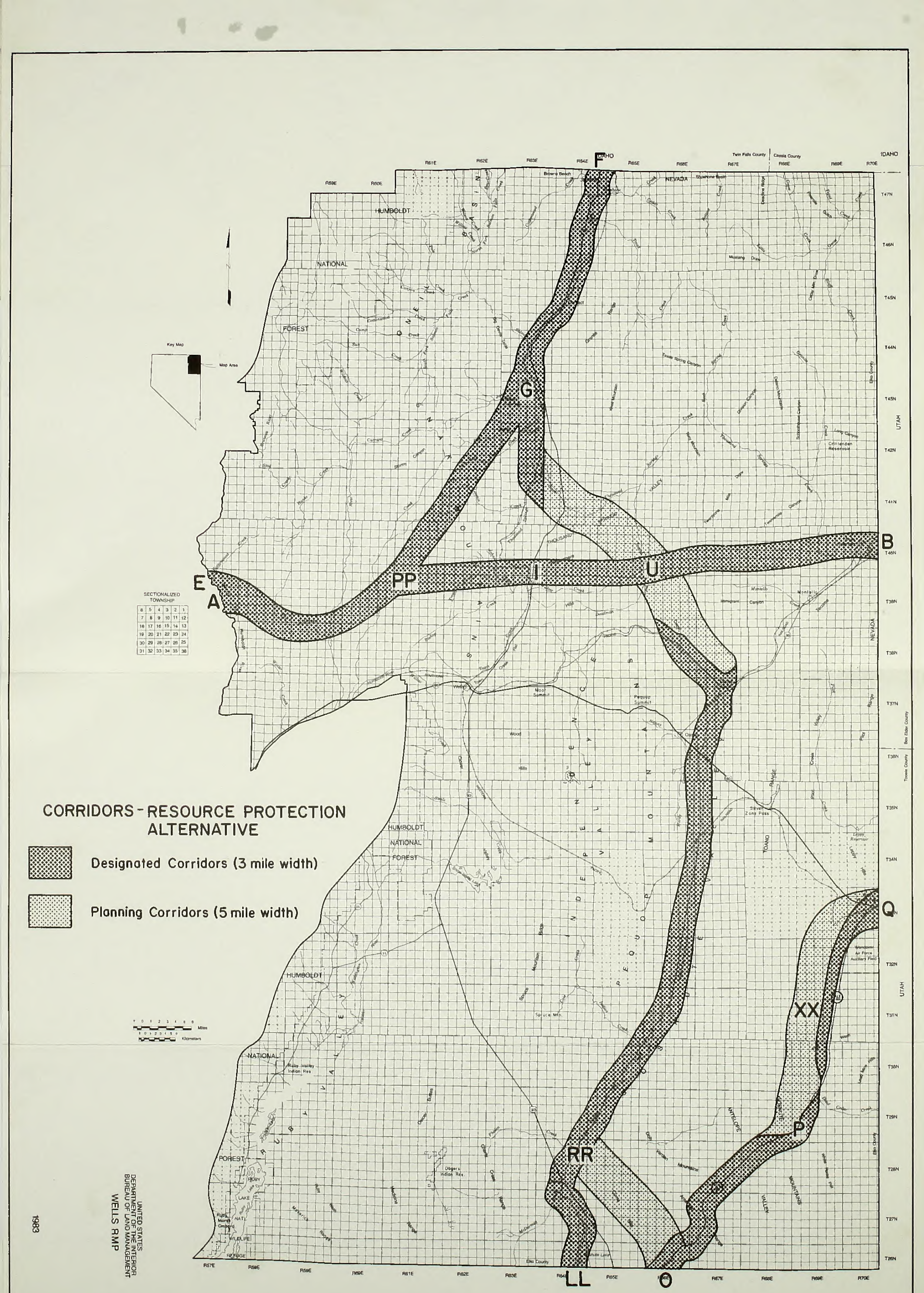
ALTERNATIVE	SUITABLE	NON-SUITABLE
NO ACTION	None	All
RESOURCE PRODUCTION	None	All
MID-RANGE	A	B,C,D,E,F
RESOURCE PROTECTION	All	None
PREFERRED	A	B,C,D,E,F


LAND TENURE ADJUSTMENTS
R/C - Retention / Consolidation
R/M - Retention / Management
D - Disposal (primarily by sale)
Alternative
Map Designation
Production and Preferred
1
Midrange
2
Protection
3
ALT. 1,2,3
D
R/C
R/M
ALT. 1
ALT. 1,2
HUMBOLDT NATIONAL FOREST
O'NEIL BASIN
SNAKE
INDEPENDENCE VALLEY
PEQUOP MOUNTAINS
GOSHUTE VALLEY
RUBY VALLEY
Key Map
Map Area
Miles
Kilometers
PUBLIC LANDS MANAGED BY B.L.M.
OTHER AGENCY LANDS
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983


IDAHO
NEVADA
UTAH
HUMBOLDT
NATIONAL
FOREST
Key Map
Map Area
SECTIONALIZED TOWNSHIP
CORRIDORS - RESOURCE PRODUCTION ALTERNATIVE
Designated Corridors (3 mile width)
Planning Corridors (5 mile width)
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
W
X
Y
Z
AA
BB
CC
DD
EE
FF
GG
HH
II
JJ
KK
LL
MM
NN
OO
PP
QQ
RR
SS
TT
UU
VV
Elko County
Box Elder County
Tooele County
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983


CORRIDORS - PREFERRED AND MIDRANGE ALTERNATIVES
Designated Corridors (3 mile width)
Designated Corridors - Low Visibility (3 mile width)
Planning Corridors (5 mile width)
Key Map
Map Area
SECTIONALIZED TOWNSHIP
F
G
H
I
U
ZZ
B
E
A
PP
V
K
S
Y
WW
R
MM
NN
Q
XX
MIDRANGE ALTERNATIVE
PREFERRED ALTERNATIVE
GG
P
RR
M
LL
O
HUMBOLDT NATIONAL FOREST
NEVADA
IDAHO
UTAH
Twin Falls County
Cassia County
Box Elder County
Tooele County
Elko County
R56E
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
Miles
Kilometers
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983


IDAHO
NEVADA
UTAH
HUMBOLDT
NATIONAL
FOREST
Key Map
Map Area
SECTIONALIZED TOWNSHIP
SALT LAKE
AREA of CRITICAL ENVIRONMENTAL CONCERN
(ACEC)
LEGEND
Alternative | ACEC Designation | Acres
No Action | None | 0
Resource Production | None | 0
Mid-Ronge | A | 6,200
Resource Protection | A,B,C | 16,200
Preferred | A | 6,200
B
A
C
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983


IDAHO
NEVADA
UTAH
Twin Falls County
Cassia County
Box Elder County
Elko County
HUMBOLDT
NATIONAL
FOREST
Key Map
Map Area
SECTIONALIZED TOWNSHIP
R59E
R60E
R61E
R62E
R63E
R64E
R65E
R66E
R67E
R68E
R69E
R70E
T47N
T46N
T45N
T44N
T43N
T42N
T41N
T39N
T38N
T37N
T36N
T35N
T34N
T33N
T32N
T31N
T30N
T29N
T28N
T27N
T26N
F
G
E
A
PP
I
U
B
Q
XX
P
RR
LL
O
Miles
Kilometers
CORRIDORS - RESOURCE PROTECTION ALTERNATIVE
Designated Corridors (3 mile width)
Planning Corridors (5 mile width)
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the existing resources and uses of the Wells RA which could be impacted by the alternatives. The resources and uses discussed are:

1. Lands
2. Corridors
3. Access
4. Recreation
5. Wilderness
6. Livestock Grazing
7. Wild Horses
8. Terrestrial Wildlife Habitat
9. Riparian/Stream Habitat
10. Woodland Products
11. Minerals
12. Economics
13. Social Values and Public Attitudes
14. Vegetation
15. Soils
16. Water
17. Air Quality
18. Cultural Resources
19. Visual Resources

SETTING

The planning area contains all of the public land administered by the Bureau of Land Management within the Wells Resource Area (RA). The Wells RA is one of two administrative subunits of the Elko District and is located in northeastern Nevada (see Location Map). It basically includes the eastern half of Elko County.

The Wells RA consists of approximately 5.7 million acres. About 4.3 million of these acres are public lands administered by BLM. The public land pattern is generally consolidated, with the exception of a 40 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.

The three principal towns are Wells, West Wendover, and Jackpot. Interstate 80 is the major east-west highway and U.S. Highway 93 is the primary north-south route.

The Wells RA can be characterized as being arid to semiarid with low precipitation on the valley floors and higher precipitation in the mountain areas, low humidity and a high rate of evaporation. Precipitation in the area varies widely with the valleys receiving only about eight inches and some high mountains receiving over 20 inches annually. Precipitation reaches a maximum during the late spring when storms from the Pacific Ocean are more intense within this region. These storms produce varying amounts of precipitation and on rare occasions may produce over one inch per hour. Snowfall varies greatly over the Wells RA, from less than 10 inches near Wendover to more then 100 inches in the Ruby Mountains. Temperatures range from summer highs of 90 degrees F to 100 degrees F and winter lows near -10 degrees F. The cold temperatures result in a freeze-free season, or growing season, of less

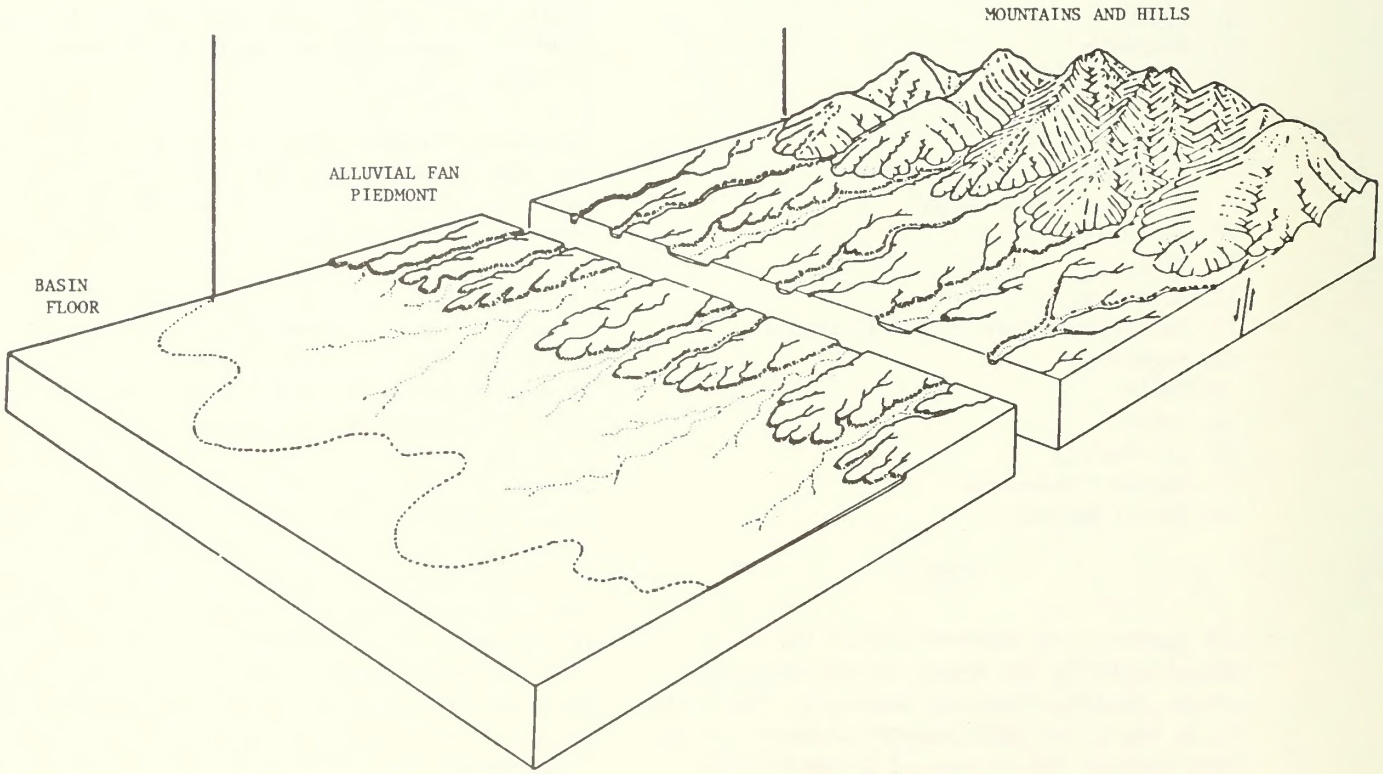
than 70 days in the north to 100 days in the south. Evaporation in the Wells RA averages about 42 inches with most of this occurring during the summer months.

The southern two-thirds of the Wells RA 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 5 to 15 mile wide mountain ranges and valleys. Valley floor elevations are generally 5,000 to 6,000 feet, while mountain elevations are typically 8,000 to 9,500 feet. Figure 3-1 illustrates typical component landforms for this region. Mountain ranges trend north to north-northeast and are 50 or more miles long. Regional topography was found as a result of crustal extension which produced the present day block faulted basins and ranges. The Columbia Plateau Physiographic Province characteristically consists of rolling plateau lands of low relief broken by occasional buttes and dissected by steep narrow canyons.

1. LANDS

Federal ownership amounts to about 76 percent of the land within the Wells RA boundaries. The remaining 24 percent, consisting of privately owned land, is concentrated primarily along the 40 mile wide "checkerboard" area. The public demand for disposal of and exchange for public lands in the Wells RA is comparatively high. This is predominantly the result of the existing land pattern, the anticipated "boom town" growth levels of the major communities of Wells, West Wendover, and Jackpot, and the relatively recent resurgence of interest in developing land under the agricul-

FIGURE 3-1 Schematic Diagram of the Basin and Range Physiographic Province



tural land laws.

The existing "checkerboard" land ownership pattern creates management problems for both Federal and private land managers. In addition, there are numerous isolated small tracts of private land within large "blocked" tracts of Federal ownership which add to the complexity of land management problems (Map 3-1 shows existing land patterns for the Wells RA).

Community growth is another major factor contributing to the demand for disposal of public lands. Wells, West Wendover, and Jackpot would like to acquire more public lands around their communities. The respective city officials feel their communities have the potential to expand as rapidly as additional support facilities, such as power and water disposal projects, can be built on public lands obtained for these purposes.

The final factor contributing to the demand for acquisition of public lands is the high interest in land disposals for agricultural purposes. There are currently over 800 applications pending for land disposals for agricultural use within the Wells RA.

The major land actions in the Wells RA to date have consisted primarily of Recreation and Public Purposes Act leases or sales to communities, rights-of-way, and agricultural entries. In the future, similar actions can be expected, along with the addition of community expansion sales, land exchanges, and actions involving energy-related production, transportation, and distribution systems.

2. CORRIDORS

The Wells RA is traversed by a number of major utility, transmission, transportation, and distribution facilities. To date, no utility right-of-way corridors have been formally established. Major distribution and transmission lines and some transportation facilities are anticipated in the future to support the Thousand Springs and White Pine Power Projects.

3. ACCESS

Legal access involves the acquisition of a right by BLM for the public to enter or cross private property by road or trail in order to gain entry to public lands. Several easement acquisitions in the Wells RA are pending, but only one, the T-Creek Road Easement on the Mary's River, currently exists within the resource area. Priority areas, including Tabor Creek, Bad Lands WSA, and Salmon Falls Creek, have been identified as needing easement acquisitions. As populations, recreation use, wood products harvesting, and mining activities intensify, access needs to public lands across private property will increase.

A potential access problem exists because there are unadjudicated interests in the Wells RA rural road system. These problems are a result of Federal law that formerly provided for road easements, but not for filing requirements, to counties and local governments if they met certain dedication criteria. It is probable that some legal county roads may exist while not being shown on the public land records. It would be beneficial to the BLM, Elko County, and the public to properly recognize these roads. Roads identified as having priority for easement acquisition are shown on Map 3-2.

4. RECREATION

Recreation use in the Wells RA is generally light and dispersed and includes camping, hunting, fishing and sightseeing. BLM administered recreation sites include the Ruby Marsh Campground SRMA and Tabor Creek (an undeveloped site).

Ruby Marsh Campground is located at the eastern base of the Ruby Mountains on public lands between the Humboldt National Forest and the Ruby Lake National Wildlife Refuge. It receives high levels of visitation (over 11,000 visitor days per year and use is expected to grow at least one percent per year) from about May until the end of October. Recreation opportunities available in the area include camping, picnicking, sightseeing, hunting, birdwatching, and fishing. Facilities in the campground are old, poorly designed, and in need of rehabilitation. Damage is occurring in portions of the campground due to unregulated ORV use. Refuse disposal is also a problem.

Tabor Creek is located approximately 25 miles northwest of Wells, Nevada. The relative proximity of this site to the town of Wells draws local residents to the area to picnic and fish. The area is also used as a base camp for mule deer hunters in the fall. Increasing visitation at Tabor Creek is resulting in accelerated resource damage as riparian vegetation continues to be reduced. The existing restroom is dilapidated

and is not used by recreationists at the creek, resulting in sanitation problems. Some conflicts are occurring between aquatic trend study sites and recreationists using these areas.

An important dispersed recreation area is a 16 mile portion of Salmon Falls Creek starting from Highway 93 near Jackpot, Nevada to the Salmon Falls Reservoir in Idaho. The first five miles provide outstanding trout fishing. The entire length offers good conditions for canoeing from March through July. Other opportunities include swimming, camping, backpacking, and sightseeing. Access to the area and lack of sanitation facilities are the major problems. Maintaining the natural character of the canyon is also a management concern.

Other recreation opportunities are offered at Crittenden Reservoir, located about 18 miles north of Montello. It is surrounded by private land and managed by NDOW as a quality trout fishery. It attracts people from all over the state as well as from Utah and Idaho. Some interest has been expressed in exchanging the private land with BLM. Such an exchange would assure future access to the reservoir and help protect the quality of the fishery.

A 26 mile portion of the Mary's River extending downstream from its source within the Jarbidge Wilderness Area is included in the National Park Service nationwide list of rivers with potential for inclusion in the National Wild and Scenic Rivers System. About five of these miles are administered by the BLM and five are in private ownership, with the remaining 16 miles under U.S. Forest Service administration. The stream contains Lahontan cutthroat trout a Federally listed threatened species.

Recreational use along Mary's River has caused resource damage in the area. Over the past few years litter has been deposited along its banks and fire rings have been increasing in numbers. Vegetation has also been lost in areas where persons camp and park their vehicles.

5. WILDERNESS

Section 603 of FLPMA requires the Bureau to review its roadless areas of more than 5,000 acres and recommend their suitability or nonsuitability for wilderness preservation to the Secretary of the Interior. The inventory process has been completed and four WSAs totalling 175,951 acres (4.1 percent of the public land) have been designated in the Wells RA. Table 3-1 displays resources and characteristics of the four WSAs and Maps 2-3 to 2-6 show the WSA boundaries. The Wells Resource Area Wilderness Technical Report (Bureau of Land Management, 1983) provides more detail about wilderness and other resource values in each WSA.

Bluebell WSA

The 55,665 acre Bluebell WSA (see Map 2-3) is about seven miles wide, eleven miles long, and consists primarily of the northern half of the Goshute Mountains. About 80 percent of the WSA is mountainous while the remaining areas are foothills and lowlands. There are four cherry-stemmed roads that provide access to the border of the WSA.

Outstanding solitude is attainable throughout the pinyon pine-juniper covered WSA but especially within about fifteen of the larger canyons, which range from two to four miles in length. Some of these larger drainages are Morris, West Morris, and Morgan Basins and Thirtymile, Johnson, and Erickson Canyons.

Outstanding primitive recreation opportunities are available within the WSA. Activities include backpacking, hiking, horseback riding, hunting, wildlife observation, sightseeing/photography, rock climbing, and fossil collecting. Five surface water sources are known to be present (Bureau of Land Management, 1983). Of importance is the fact that 5,000-6,000 raptors, including goshawks and golden and bald eagles, are known to migrate south over the WSA each fall.

Goshute Peak WSA

The 69,770 acre Goshute Peak WSA (see Map 2-4) is about seven miles wide, twenty miles long, and consists primarily of the southern half of the Goshute Mountains. About 66 percent of the WSA is mountainous while the remaining areas are foothills or alluvial fans. There is one cherry-stemmed road providing access to the border of the WSA.

Outstanding solitude is attainable throughout the WSA because of its moderately dense pinyon pine-juniper cover, extreme topographic relief, and large size. Three of the drainages which provide exceptional solitude are Lion, Felt Spring, and Ferguson Canyons.

Outstanding primitive recreation activities are available within the WSA. Activities include backpacking, hiking, horseback riding, hunting, wildlife observation, sightseeing/photography, rock climbing, and fossil collecting. Less than five water sources are known to be present (Bureau of Land Management 1983).

Of major significance is a raptor observation and trapping area located atop the ridgeline in the WSA. At the site over the past four years about 5,000 to 6,000 raptors, including goshawks and golden and bald eagles, have been observed migrating south each fall. A small portion of these are trapped and released for scientific data gathering purposes.

Also of significance is the known presence of a roost tree for wintering bald eagles.

South Pequop WSA

The 41,090 acre South Pequop WSA (see Map 2-5) is about four miles wide, twelve miles long, and consists primarily of the southern end of the Pequop Mountains. About 80 percent of the WSA is mountainous while the remaining portions are foothills and lowlands. There are five cherry-stemmed roads that provide access to the perimeter of the WSA.

Outstanding solitude is attainable throughout the pinyon pine-juniper covered WSA. There are about 10 unnamed drainages which trend southeasterly and northwesterly to the ridgeline. These, in combination with the moderately dense vegetation, provide places of seclusion for the visitor.

Outstanding primitive recreation opportunities are available in the WSA. Activities include backpacking, hiking, horseback riding, hunting, wildlife observation, sightseeing/photography, and fossil collecting. Limited water sources are known to be present (Bureau of Land Management 1983).

A wintering bald eagle roosting area was recently discovered on Spruce Mountain, about five miles west of the WSA. This suggests that there is a good potential for one or more such sites to exist within the WSA.

Bad Lands WSA

The 9,426 acre Bad Lands WSA (see Map 2-6) is about four miles wide, six miles long. The WSA is comprised of about 68 percent rough volcanic hills, 21 percent Salmon Falls Creek and its associated drainages, and 11 percent gently sloping mesas. No cherry-stemmed roads lead to the WSAs perimeter but an unauthorized phoneline forms portions of its southern and western border.

Outstanding solitude is attainable throughout the WSA, especially within Salmon Falls Creek and its associated drainages. The riparian vegetation in the eight-mile main river canyon reaches heights of 15 feet. Salmon Falls Creek is generally rimmed by steep canyon walls that fall away about 200 feet to the canyon floor. The largest of its ten side drainages are Scott and Monkey Creeks. Scott Creek is about five miles long and surrounded by volcanic hills. Monkey Creek is six miles long and surrounded by steeper volcanic hills. The remaining drainages range from 1/2 to two miles long.

Outstanding primitive recreation opportunities are available in the WSA. Activities include backpacking, hiking, horseback riding, hunting, wildlife observation, sightseeing/photography, stream fishing, and kayaking. The Bad Lands WSA offers one of the best opportunities in the resource area for foot travel in canyon land topography. It also provides one of two opportunities in the resource area for kayaking during part of the year.

The stream fishing available to the hiker or kayaker is considered the best in Elko County. Both rainbow and German brown trout inhabit these waters, due primarily to the excellent riparian habitat found along its banks. However, largely because of increasing sediment loads from upstream, the spawning gravels for these fish are being eliminated. Therefore, the quality of this fishery and its associated recreational value is being reduced over time.

One known archaeological site in the WSA contains seven rock shelters. Based on the presence of points, flakes, bone and mussel shell, these shelters are thought to have been inhabited by at least part of the year during prehistoric times. They have been heavily vandalized since their recordation in 1975.

The WSA is of excellent scenic quality. The volcanic rock formations viewed from within the canyon are of exceptional beauty. Also, their

TABLE 3-1

WSA RESOURCES AND CHARACTERISTICS

FOR THE WELLS RESOURCE AREA

	Bluebell	Goshute Peak	South Pequop	Bad Lands
Acres	55,665	69,770	41,090	9,426
Existing Visitor Days[1]	300	800	150	500
Special Features				
Geological	X	X	X	X
Scenic	X	X	X	X
Cultural Resources[2]				
Open Aboriginal Sites	800	990	630	180
Rock Shelters	60	60	10	40
Historic Sites	40	50	40	30
Scientific & Educational Values				
Wild Horses	120	120	80	0
Bristlecone Pine	X	X	X	
Energy and Minerals				
Mining Claims				
Number	49	20	0	0
Acres	980	400	0	0
Oil & Gas Leases				
Number	9	13	15	1
Acres	9,600	12,870	18,600	2,325
Woodland Products (acres)	27,830	45,350	22,725	0
Livestock Management				
Permittees	7	6	3	4
AUMs	4,340	5,593	4,501	904
Rights-of-Way				
Existing	0	2	1	0
Application	0	0	0	1
Applications for Land Disposals for Agricultural Use				
Number	3	0	7	0
Acres	340	0	720	0

1 Estimated by the Wells Area Outdoor Recreation Planner

2 Statistical projections based on a cultural resource inventory of less than one percent of the Wells RA.

Source: Bureau of Land Management 1980g.

color contrast with the riparian vegetation and surface water provide outstanding photographic subjects.

6. LIVESTOCK GRAZING

The Wells RA has a total of 379,279 AUMs of adjudicated grazing preference distributed over 89 allotments. Livestock operators were originally awarded grazing privileges in accordance with the Taylor Grazing Act of June 28, 1934. These privileges have been adjusted periodically following range surveys. The three to five year average authorized use taken from 1977 to 1981 and used for comparison purposes in this document is 288,934 AUMs. This represents 76 percent of the total grazing preference.

Of the 81 livestock permittees in the Wells RA, 66 run cattle only, 10 run sheep only, and 5 run both cattle and sheep. The majority of cattle use is from early April when perennial grass growth starts, to late October. The majority of sheep use is made by Utah livestock operators between early November to late March, when vegetation is least susceptible to grazing damage.

There are nine allotment management plans (AMPs) ranging in size from 418 to 119,410 acres. Allotments under an AMP comprise 344,000 acres of public land, or eight percent of the Wells RA. An AMP determines the manner and extent that grazing operations will be conducted. They are prepared in consultation with the livestock operators and use the benefits of grazing systems and range improvements.

There are 11 allotments with grazing systems which are not under an AMP. These range in size from 2,449 to 238,254 acres and account for 407,000 acres of public land or 10 percent of the resource area.

Allotments under neither an AMP nor a grazing system comprise 3,523,000 acres or about 82 percent of the Wells RA public lands. They range in size from 263 to 797,164 acres, generally have fenced boundaries (including natural boundaries), and have few, if any, pasture fences. These allotments may have poor livestock distribution patterns due to a lack of adequate water and pasture fencing.

Selective Management Categorization

All allotments have been tentatively placed in one of three categories: M (maintenance), I (improve), or C (custodial). Table 2-1 in Chapter 2 shows category and other information by allotment and Map 3-3 shows allotment boundaries as well as categories. The implementation portion of Chapter 2 discusses the categorization criteria Appendix 2 shows criteria application by allotment.

Table 3-2 displays existing livestock grazing uses and economic situation by RCA.

7. WILD HORSES

The Wild and Free-Roaming Horse and Burro Act became law on December 15, 1971. With the passage of this act, the authority to manage wild horses and burros on public land was assigned to the BLM and U.S. Forest Service. The Act proclaims that wild and free-roaming horses and burros are protected from capture, branding, harrassment, or death. They are to be considered, in the area where they were found in 1971, as an integral part of the natural system.

Wild horses are currently found in six herd units on the Wells RA (Map 3-4). These herd units encompass all or part of grazing allotments. Herd units have been established based upon historical horse use areas and inventory data gathered from 1975 to 1981. The assignment of specific animals and lands to a herd unit varies as there is some movement between herds. Considerable interplay occurs between the Elko and Ely Districts in the Maverick-Medicine, Cherry Creek, and Antelope Valley herd areas. This back and forth movement does not appear to be an organized migration that occurs every year but is more a function of weather and availability of feed and water.

No complete counts were made in these areas in 1971. The first census occurred in 1975; however, this included numerous claimed horses that were gathered prior to 1978. The first count, after the claiming period, occurred in March 1978.

Major problems which may be faced by the wild horse herds in the future include fences that inhibit movement to areas for forage or water and conflicts with humans.

Conflicts with private landowners arise from wild

horses using private forage, space, and water. This occurs in the north end of the Spruce-Pequop and Goshute herd use areas, and all of the Toano herd use area. These are all areas having checkerboard land patterns. If a private landholder should request BLM to remove horses from private lands, BLM is obligated to do so. BLM may also pursue cooperative agreements with a private landholder to allow for a certain specified number of wild horses to exist on the intermingled land. Table 3-3 lists the herd use areas, herd size, resource conflicts and the allotments where these conflicts are found.

TABLE 3-2

LIVESTOCK GRAZING CHARACTERISTICS BY RCA
FOR THE WELLS RESOURCE AREA

RCA	No. of Allot.	No. of Oper.	Total Preference (AUMs)	% of 3-5 year Avg. Use To Pref. (%)	Total Gross Income (dollars)	Total Gross Livestock Sales (% of RA)	Net Ranch Income (dollars)[2]	Total Net Ranch Income (% of RA)
Cherry Creek	7	6	14,436	80	$ 381,000	2.4	$ 54,000	1.0
Spruce/Goshutes	14	14	119,013	41	4,905,000	30.8	2,226,000	41.0
Mary's River	8	5	54,394	84	2,117,000	13.3	825,000	15.2
O'Neil/Salmon Falls	8	8	71,932	99	2,956,000	18.5	1,045,000	19.3
Goose Creek	6	11	25,904	89	1,131,000	7.1	318,000	5.9
Pilot/Crittenden	3	5	30,763	98	685,000	4.3	222,000	4.1
Metropolis	17	14	44,216	97	1,799,000	11.3	374,000	6.9
Ruby/Wood Hills	26	24	18,621	82	1,974,000	12.3	352,000	6.6
RA TOTAL	89	86 [1]	379,279		$15,948,000	100.0	$5,416,000	100.0

[1] The actual total number of operators is 81. The additional number is due to use in more than one RCA.

[2] Return above cash costs and family labor.

Source: Bureau of Land Management 1982f.

TABLE 3-3

WILD HORSE HERD UNIT CHARACTERISTICS
FOR THE WELLS RESOURCE AREA

Herd Use Area Name	Herd Size 1978	Herd Size 1981	Resource Conflicts Fences	Resource Conflicts Humans	Conflict Allotments
Maverick-Medicine	112	244	X		Maverick, West Cherry Creek, Spruce, Odgers, Currie
Cherry Creek	74	64	X		Currie, West Cherry Creek
Antelope Valley	449	164			
Goshutes	129	120		X	Big Springs, Pilot
Spruce/Pequop	—	80	X	X	Big Springs, Spruce
Toano	—	20	X	X	Big Springs, Pilot

Source: Bureau of Land Management 1982f.

8. TERRESTRIAL WILDLIFE HABITAT

Threatened, Endangered, and Sensitive Species

The bald eagle is the only Federally listed endangered animal species which occurs in the Wells RA. Peregrine falcons (a Federally listed endangered species) and bighorn sheep (a Nevada listed sensitive species) inhabited the resource area in the past.

Bald Eagles

An inventory of bald eagle winter habitat recently identified 192,000 acres of essential wintering habitat (Beck 1980). This habitat is primarily in the southern half of the resource area and includes Antelope, Butte, and Ruby Valleys. Page and Miller (1981) identified two communal roost sites during a subsequent bald eagle survey. These were the first to be identified in the Elko district and are also considered to be essential habitat. Additional sites and potential sites have been recently identified.

Peregrine Falcons

Pesticide contamination in the late 1960's led to the decline of this species throughout the Western Hemisphere. Current research, management techniques and efforts by wildlife scientists have documented the upward trend of the peregrine falcon throughout the West. Porter and White (1973) documented that an area within the Spruce/Goshutes RCA previously supported this species. This site (the proposed Salt Lake ACEC) is one of three possible sites within or immediately adjacent to the resource area where peregrine falcons were known or thought to exist (Ballanyne and Jones 1981). Existing or past land uses and abuses have complicated land management opportunities at the other two areas.

Ballantyne and Jones (1981) conducted a peregrine falcon habitat inventory which identified nearly 213,000 acres in the resource area as historic habitat. About 62 percent (132,000 acres) of this habitat occurs in the northern half of the Wells RA, with the remainder in the southern half. This species used broad, flat valleys, specifically Tecoma and Blue Lake Valleys and the North Fork of the Humboldt River for hunting, feeding, and nesting.

Bighorn Sheep

The state listed sensitive species historically inhabited many areas within the resource area, including but not limited to the Pilot Peak Range, the Goshute Mountains, and the Bad Lands. In 1980 NDOW conducted a study of all northern Nevada areas capable of supporting bighorn sheep and assigned a priority rating for potential reintroduction (Golden and Tsukamoto 1980). Currently, NDOW has no immediate plans for reintroductions into these areas.

In 1981 the Elko BLM District conducted a more detailed habitat evaluation in these same areas. The results were: Pilot Peak, not evaluated; Goshutes Mountains, fair to poor; and Bad Lands, good.

Big Game Populations and Habitat Condition

Mule deer and pronghorn antelope occur throughout the Wells RA. Elk occur only in the Pilot Peak Mountain Range. Presently, bighorn sheep do not occur within the resource area. Maps 3-5 and 3-6 show existing big game habitat for mule deer, elk, antelope, and potential habitat for elk and bighorn sheep. Appendix Table A3-1 shows reasonable and existing big game numbers by RCA.

The 1981 mule deer population in the Wells RA is estimated at 38,000 to 40,000. This represents about 30 percent of the total Nevada population. In general, population estimates are down from 1980 in the northern half of the resource area and up in the southern half.

The 1981 pronghorn antelope population in the Wells RA is estimated at 800 to 1,000. Population estimates are up from 1980.

There is no official population estimate for elk in the Wells RA. However, the best available information places herd numbers between 50 and 100. This population appears to be increasing in size.

The Wildlife Habitat Inventory (Bureau of Land Management 1981d) shows that mule deer summer ranges are in fair to good condition, while winter ranges are in fair to poor condition. Livestock competition and habitat reduction seem to be the primary reasons for habitat decline (Bureau of Land Management 1982b).

Pronghorn antelope summer, winter, and yearlong habitat are rated in fair to poor condition. Competition and habitat destruction, particularly

by livestock, are cited as primary reasons for this situation (NDOW 1977, 1978 and Miller 1980).

Elk habitat is in poor condition at lower elevations primarily from livestock competition. Higher elevation range is rated in good condition. Habitat conditions are shown by RCA for the four big game species in Appendix Table A3-2.

Upland Game Habitat Condition

Sage grouse, blue grouse, chukar partridge, mourning doves, and rabbits are probably the most common and abundant upland game species within the Wells RA. Of these species, the sage grouse and its habitat needs are the most significant and will be the only upland game species addressed throughout the plan. Kesting and Susmilch (1980) inventoried one of the more sensitive habitat components for this species. They inventoried 180 strutting grounds, 49 in the southern part of the resource area and 131 in the north. The majority of the sage grouse life cycle requirements are in close proximity to strutting grounds. Nesting and brood rearing habitat, as well as wintering habitat, are of equal importance and concern. Currently however, the single most impacted habitat component is brood rearing habitat. The importance of meadows and riparian habitat to young sage grouse has been documented in Nevada (Oakleaf 1971). This subject and further analysis will be primarily covered under the habitat conflicts section dealing with terrestrial riparian habitat.

Significant Wildlife Hazards and Habitat Conflicts

Fencing Hazards

The Wells RA contains approximately 650 miles of fence that are not in conformance with BLM manual 1737, which outlines proper specifications for fences in big game habitats (Bureau of Land Management 1981c).

Improperly constructed fences are movement and migration barriers especially for deer and antelope. Fences on mule deer range should not exceed 42 inches in total height from the ground to the top wire, with at least a 12-inch space between the top two wires to prevent leg twisting (Kerr 1979). Deer can negotiate a higher fence, but this fencing placed on hillsides represents a tremendous movement barrier to healthy and unhealthy deer alike (Anderson 1980). Fences on antelope range should not exceed 38 inches total height from the ground to the top wire. The bottom wire should be smooth and at least 16 inches above ground level. Antelope will usually pass under, rather than over a fence. Wovenwire, sheep-proof fences represent the greatest hazard to antelope by restricting movements. Many miles of fence in the resource area do not meet these specifications or are constructed of wovenwire. Papez (1976) documented major changes in deer migratory patters within the resource area because of incorrectly constructed fences.

Water Facility Hazards

Studies show that deer fawns and antelope kids experience great difficulty in attempting to drink from any water trough exceeding 20 inches total height from ground level. Trough height should be a management consideration in placing new, or modifying existing, troughs. The placement of rocks, concrete blocks, or other ramp facilities in troughs provides an escape route where the water depth exceeds 20 inches.

Small mammals and birds occasionally become trapped and drown in troughs without adequate escape facilities. A decaying, deteriorating carcass reduces water quality for wildlife and livestock alike.

The drowning hazard can be reduced by placing floats, ramps, or ladders in watering devices to provide an avenue of escape. Hundreds of troughs, constructed prior to this becoming a standard operating procedure (see Chapter 2), exist within the resource area (Bureau of Land Management 1981d). An ongoing program to correct these problems is currently under way and, therefore, the analysis of this impact to wildlife will not be discussed further.

Additional identified hazards will be corrected on a case-by-case basis depending on their magnitude and the wildlife species most adversely impacted. Hazards such as identified powerlines or poles that are causing raptor electrocutions will be corrected in cooperation with the respective power company. These hazards will not be analyzed further.

Habitat Conflicts

There are approximately 2700 acres of terrestrial

riparian habitat within the Wells RA, which represents less than 0.08 percent of the total public land acreage. More than 300 terrestrial wildlife species are known to occur within the Wells RA. It is estimated that approximately 80%, or more than 250 species, are directly dependent on terrestrial riparian habitat or use it more than any other habitat. Thomas, et al (1979) state that for any given number of acres of habitat, this habitat type supports a higher population diversity and density than any other type. The primary habitat conflict is the trampling of water sources, particularly cold springs and small wet meadows, by livestock. Trampling also reduces the quality and quantity of both water and vegetation by creating a hummock effect on the soil and destroying valuable forage.

The following number and type of terrestrial riparian features were inventoried between 1979-1982; 110 seeps (20 acres), 720 springs (75 acres), 500 small wet meadows (400 acres), 30 small natural ponds (30 acres), and 270 small groups of trees (2400 acres). Each feature was evaluated for their current habitat condition, acreage of each estimated and hazard and habitat conflicts documented. The following shows the percentage of total acres by type of feature currently in less than good condition; 81% of the seeps, 63% of the springs, 50% of the small wet meadows, 80% of the small natural ponds and 29% of the small groups of trees (riparian) (Bureau of Land Management 1981d).

The reduction of cover surrounding these features is also part of this habitat conflict. Over utilization of forage, or management practices that allow these areas to be considered "sacrifice areas," severely impacts the cover aspects of any given site. Increased predation and subsequent loss of animals is usually the result. Recent studies have substantiated that the single largest negative impacts to wildlife are those that reduce vegetative conditions such as diversity, structure, and regeneration (Mackie 1978, Wagner 1978, and Gallizioli 1977).

Additional habitat conflicts such as the placement of livestock supplements (salt) on meadows, pipelines and wells that are turned off seasonally in areas where wildlife have no other available water sources, and the existence of roads in or through riparian habitats will be corrected on a case-by-case basis. These habitat conflicts however will not be analyzed further.

ISSUE 9: RIPARIAN/STREAM HABITAT

Wetland - Riparian Ecosystems

Wetland-riparian ecosystems are the most productive areas on western rangelands (Dealy et al. 1981, Thomas et al. 1979). They are defined as areas where vegetation is the product of the presence of perennial and/or intermittent surface water, the associated high water tables, and soils which exhibit some wetness characteristics. These ecosystems are also characterized by high animal species diversity and density.

Wetland-riparian areas represent less than one percent of the Wells RA. However, the majority of wildlife species either depend on these areas or use them more than any other habitat type. Wetland-riparian areas also play an essential role in determining the quality of the aquatic habitat for fish resources and the purity of surface water (Thomas et al. 1979).

Riparian areas accommodate and attract important recreational activities, including hunting, fishing, camping, and hiking. Aesthetic value is high because of the pleasing combination of land and water, an attractive and unique variety of vegetation types, and the abundance of animal life.

Aquatic and riparian inventories were conducted by NDOW and BLM jointly during 1979 and 1980 on all streams known to support or having the potential to support fish populations. The inventory conformed to procedures in the Nevada State Office Supplement (Release NSO 6-38, dated 1/25/78) to BLM Manual 6671. Both public and private segments were inventoried to provide overall information about each stream and its watershed. This information provides for a complete understanding of the stream and the surrounding riparian community necessary for effective public land management. Owners of inventoried stream segments were contacted prior to evaluation and all individuals gave their consent. See Appendix 4 for the procedure used to contact private landholders.

The inventory evaluated a total of 452 stream miles and 11,413 acres of riparian vegetation, of which 220 miles and 5,928 acres were on BLM ad-

ministered land. Of the BLM administered segments, 161 miles and 4,350 acres, or 73.3 percent were rated in poor to fair condition.

The riparian habitat condition rating is derived from an average of ratings for streambank vegetation cover and streambank stability. This rating is expressed as a percentage of optimum. The resulting rating of excellent, good, fair, or poor corresponds to classes I, II, III and IV, respectively as shown in Appendix I of BLM Manual 6740.

Map 3-7 portrays current streamside riparian habitat and conditions. Table 3-4 shows current streamside riparian habitat condition by RCA.

Aquatic Habitat and Fish Populations

Results of the joint stream inventories conducted in 1979 and 1980 indicate that, of the 452 miles inventoried, 51.1 percent are privately owned and 48.9 percent are BLM administered. Habitat condition was rated poor on 66.7 percent of the 45 streams and fair on 20 percent. Only 13.3 percent of the streams were in good or excellent condition. Table 3-5 portrays current aquatic habitat condition for each RCA and Map 3-8 displays current valuable aquatic habitat and condition.

The overall rating is based upon a percentage of optimum, that being the theoretically perfect condition, or 100 percent. The condition rating is classified as follows: excellent, 70 percent and above; good, 60 to 69 percent; fair, 50 to 59 percent, and poor, 49 percent and below.

The overall habitat condition (percentage of optimum) was determined from an average of values for five "Priority A" fish limiting factors. Each of these factors was rated poor to fair on at least some of the 45 streams inventoried: pool to riffle ratio on 18 streams; pool quality on 44; stream bottom percent desirable materials on 23; bank vegetation cover on 41; and bank stability on 33.

"Priority B" limiting factors are not averaged in the overall rating but are significant in limiting fish populations. The stream widths and depths, for example, were found to have a mean ratio of 24:1, which indicates a wide and shallow stream channel with limited space for fish.

Shading of the stream surface is important in keeping water temperatures cool enough to support trout populations. A minimum surface shading of 70 percent serves to protect streams from excessive solar radiation. Of the streams surveyed in the Wells RA, surface shading averaged only 15 percent. The percentage of stream bottom with sedimentation (sand and silt) averaged 24 percent. This heavy sediment load inhibits fish food production and smothers fish eggs (Armour 1977). Lack of surface shading and heavy sediment beds are both direct results of deteriorated riparian habitat.

Trout populations were present in 35 of the 45 streams inventoried. Relict dace, commonly known as the Steptoe dace, were in two streams, and six other streams contained only nongame fishes. No fish were found in two of the streams. Game fish occupied a total of 282 miles of streams, of which 158 miles were in BLM administered segments.

Rainbow trout occupied 17 streams, plus several streams in combination with other trout species. Brown trout were the only trout in one stream and in three streams in combination with other trout species. Brook trout were present in three streams together with other trout species.

Threatened, Endangered, and Sensitive Species

Lahontan cutthroat trout, listed as threatened on the Federal list, occupy 10 streams. Nine of these streams are in the Mary's River drainage, while one stream, the West Fork of Deer Creek, is in the Salmon Falls River drainage. A total of 54.3 miles of stream, of which 27.8 miles are BLM administered, were inhabited by these cutthroat trout. This 54.3 miles represents 43.5 percent of the total Lahontan cutthroat habitat within the Elko District.

Five of the 10 streams with Lahontan cutthroat trout were in poor habitat condition and four were rated fair; only one was in good condition. Individual inventory reports and the "Status report on Lahontan cutthroat trout within the Elko District" (Bureau of Land Management, 1980f) provide much more detailed information.

Redband trout is considered a sensitive species by NDOW and are present in one stream. This species is closely related to rainbow trout. It was introduced into Trout Creek near Jackpot, Nevada, in 1977 from Chino Creek in the Elko Resource Area. Trout Creek, Chino Creek, and Winters Creek (Elko RA) are the only streams in

TABLE 3-4

CURRENT STREAMSIDE RIPARIAN HABITAT CONDITION BY RCA
FOR THE WELLS RESOURCE AREA (ACRES)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		25.6		135.5		161.1
Spruce/Goshutes	32.0					32.0
Mary's River		300.8	646.4	1,167.0		2,114.2
O'Neil/Salmon Falls	288.0	585.8	1,144.2	6,854.4	Approx. 30	8,902.4
Goose Creek				108.8		108.8
Pilot/Crittenden Metropolis			19.2	83.2		102.4
Ruby/Wood Hills						
Total Acres	320.0	912.2	1,809.8	8,348.9	Approx. 30	11,420.9

Source: Bureau of Land Management 1980e.

TABLE 3-5

CURRENT AQUATIC HABITAT CONDITION BY RCA
FOR THE WELLS RESOURCE AREA (MILES)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek				21.7		21.7
Spruce/Goshutes	2.1					2.1
Mary's River		7.0		115.5		122.5
O'Neil/Salmon Falls	21.8	22.9	64.3	140.3	Approx. 5	254.3
Goose Creek			27.5	18.2		45.7
Pilot/Crittenden Metropolis			3.0	7.9		10.9
Ruby/Wood Hills						
Total Acres	23.9	29.9	94.8	303.6	Approx. 5	457.2

Source: Bureau of Land Management 1980e.

Nevada known to contain populations of redband trout. Nevada redband trout are unique in that they have tolerated water temperatures up to 85 degrees F (Behnke 1979).

Relict dace is listed as a rare species by the state of Nevada. Its distribution is limited to several valleys in Elko and White Pine counties. The 1980 BLM stream/riparian inventory sampled historical sites and other suspected sites in Elko County. Of the 11 historical relict dace sites within Elko District, only four were documented as still containing dace. Access was denied to two sites, and five sites no longer contained dace. Elimination of dace from these five sites was probably caused by a combination of introduced exotic fishes, alteration of water sources for stock watering, and heavy grazing of spring sources. One new site at Franklin Lake in Ruby Valley was discovered to contain relict dace.

Three other species considered for listing by the USFWS are the Independence Valley tui chub, Clover Valley speckled dace, and Independence Valley speckled dace. However, the suspected habitat sites for these species are not found on public lands. Therefore, further consideration of these species and anticipated impacts to their habitats will not be provided.

Significant Habitat Conflicts

Impacts associated with mining, roads, diversions and channelization were important on some specific stream locations. However, the analysis of limiting factors in each stream inventory report indicated that, in most cases, livestock grazing was primarily responsible for producing and maintaining deteriorated aquatic/riparian habitat conditions. Contemporary riparian studies within the Wells RA on Tabor, Chimney and Deer Creeks, on Gance Creek in the Elko RA, and on other streams within the Intermountain area support this finding (Platts and Nelson 1982d, 1982e and Crispin 1981). Lowered water tables, higher stream temperatures, increased sedimentation, decreased water storage capacities, unstable stream banks, and elimination of streambank vegetation all are common occurrences on Wells RA streams where riparian zones are not protected. (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1981, Winegar 1977, 1980a and Bowers et al. 1979). The summary of the aquatic/ riparian inventory and analysis of impacts within the resource area is on file in the Elko District.

10. WOODLAND PRODUCTS

Pinyon pine, Utah juniper, and curl leaf mountain mahogany are the three most common tree species in the Wells RA. They occupy approximately 95 percent of an estimated 600,000 to 700,000 forested acres in the resource area. Also present are limber, bristlecone, and whitebark pine, aspen, white fir, and Englemann spruce. Woodlands are mostly located in the Cherry Creek, Spruce/Goshutes, and Pilot/Crittenden RCAs. Many people living in or near the Wells RA rely on BLM woodland areas for fuelwood. Without a fuelwood source, these individuals would have to depend on other fuels. Christmas tree cutting is another major activity conducted on BLM lands. In addition, several commercial businesses provide fuelwood, Christmas trees, posts, and pinenuts to the public from these woodlands.

A woodland inventory is presently being conducted. When inventory processing is completed, more accurate information may be available. The volumes and numbers shown below may then be changed.

Cordwood yields vary with the density, age, and composition of stands. Utah juniper yields vary from one to 15 cords per acre. Pinyon pine will produce five to seven cords per acre in mixed stands, and 11 to 15 cords per acre in pure stands. Prime Christmas tree areas may support 10 to 20 trees per acre; however, most areas produce two to three trees per acre. Pinyon pine nut crops vary annually. During good crop years, yields have been estimated to reach 300 pounds per acre (Hamilton 1965).

There has been little specific management of woodland products in the Wells RA beyond providing permits to the public for fuelwood, posts, poles, and Christmas trees. As a result, resource deterioration is becoming more apparent in certain areas.

The major problem has been that of indiscriminate cutting of both fuelwood and Christmas trees. Live trees have been cut for fuelwood in areas where such harvest is not permitted. Christmas trees have been overcut in locations to where harvests will not again be possible for 15 to 30 years.

Table 3-6 provides recent data on volume and sales of woodland products materials for the resource area.

11. MINERALS

Geology

Rock types are diverse but basically consist of Paleozoic marine sedimentary rocks (limestone, sandstone, and shale), Mesosoic intrusive rocks (granites), and Tertiary continental deposits (Stewart, 1980). The Tertiary rocks are dominantly volcanoclastic basin fill deposits (tuffaceous sandstone and siltstone, limestone, conglomerate, and shale) and volcanic flows, domes, and pyroclastics ranging in composition from basalt to rhyolite.

Major tectonic events include the Roberts Mountain thrust fault and Tertiary Basin and Range block faulting. Mid-Paleozoic compressional forces caused siliceous marine sediments to be thrust eastward over carbonate rocks. Basin and Range faulting has resulted in much of the relief apparent in the region today.

Both periods of faulting helped to create permeable systems which have allowed ascending fluids to form the numerous base and precious metal deposits found in the resource area. Other mineral deposits, such as barite, were formed as sedimentary layers on the ocean floor. The nearly 30,000 foot thick sequence of marine rocks in the resource area are a potential source of oil and gas. Tertiary bed deposits are also potential oil and gas producers; however, no commercial discoveries of oil and gas have been made.

Locatable Minerals

Identified and potential reserves of critical and/or strategic minerals in the Wells RA are as follows:

Aluminum metal
a. Alumina
b. Bauxite
Antimony
Asbestos
Beryllium
Bismuth
Cadmium
Celestite
Chromium
Cobalt
Columbium
Copper[1]
Diamond
Fluorspar[2]
Graphite
Kyanite
Lead[1]
Manganese[2]
Mercury[2]
Mica[2]
Molybdenum[1]
Nickel
Platinum metals
a. Iridium
b. Palladium
Quartz crystals[2]
Ruby
Sapphire
Silver[1]
Talc
Tantalum metals
Thorium
Tin
Titanium
Tungsten[1]
Vanadium[2]
Zinc[1]
Zirconium

[1] Identified mineral reserves
[2] Potential mineral resources

Source: Federal Emergency Management Agency 1982.

The lack of production of identified mineral resources in the Wells RA is chiefly related to economic or technological problems. Therefore, critical and/or strategic minerals not shown as identified or as potential reserves are not likely to be mined in the Wells RA in the near future. A technological breakthrough or increase in the price of identified reserves could result in new mining activities.

By far the most important mineral mined is barite. Tungsten, copper, silver, and molybdenum are also important minerals mined in lesser quantities. There are 13 active mines in the resource area; most have some type of associated mill. Hundreds of mining claims are being initiated annually in the Wells RA.

Oil and Gas

Geophysical exploration for oil and gas has been active in the Wells RA in the last few years, with an average of 15 to 20 notices of intent (NOIs) to conduct oil and gas exploration being filed each year. Oil and gas leasing has also been active, with about 100 leases per year being issued.

The Wells RA has a history of unproductive oil and gas drilling. However, interest remains high, as evidenced by the magnitude of exploration efforts. Much of the area is unexplored, with efforts centering in valley and foothill regions.

Geothermal

Geothermal exploration has been conducted north of Deeth and in Ruby Valley on leases. Only minor geothermal exploration has been done in the remainder of the Wells RA.

The potential for development of geothermal resources is high in the resource area. Unusually high crustal heat flow is present in the Wells RA and can result in high temperatures

TABLE 3-6

SALES OF WOODLAND PRODUCTS FOR THE
WELLS RESOURCE AREA

Fiscal Year	Firewood (Cords)	Posts (ea.)	Christmas Trees (ea.)
1980 Volume	632	4,905	7,560
Monetary Value to BLM	$1,264	$999	$7,560
Estimated Market Value	$47,400	$20,600	$181,440
1981 Volume	762	2,508	14,493
Monetary Value of BLM	$1,524	$508	$14,493
Estimated Market Value	$60,960	$10,532	$347,832
1982 Volume	1,321	3,380	3,547
Monetary Value to BLM	$2,912	$700	$6,342
Estimated Market Value	$112,285	$11,730	$85,128

Note: Sales include both in state and out-of-state sales of forest products to both commercial and noncommercial buyers. An estimated three times these amounts of fuelwood and Christmas trees are removed without authorization.

Source: Bureau of Land Management 1982g.

at a shallow depth. Evidence of the high heat flow is seen in the numerous hot springs present.

Mineral Potential

Estimates of mineral potential in the Wells Area by RCA are shown in Table 3-7. Mineral potential classifications are as follows:

High Potential - High potential is assigned to areas that contain or are extensions of active or inactive properties which show evidence of ore, mineralization, and favorable geologic characteristics. All producing properties fall within this category.

Good Potential - Good potential is assigned to areas with several geologic characteristics indicative of mineralization, relatively lower economic value of past production, and similar environments but at greater distances from known ore and mineral occurrences. This category may include areas adjacent to known districts or in mineral belts.

Low Potential - Low potential is assigned to areas that have relatively few favorable geologic characteristics, no known mineral occurrences, or are buried by considerable alluvium.

12. ECONOMICS

Population

The Wells RA is sparsely populated. The entire resource area is considered rural in nature, although 57 percent of the population is located in three urban centers. Wells is the largest community, followed by Jackpot and West Wendover. Table 3-8 provides population information and projections for the resource area. Population projections are based upon each city's community development plans. The city of Wells will also be substantially affected by Sierra Pacific's proposed Thousand Springs Power Plant.

Employment and Income

Tourism is the most important income producing trade in the resource area, followed by agriculture and mining. Secondary businesses such as banking and retail stores are not well developed because the population is too small to support them. Table 3-9 depicts employment data and Table 3-10 shows personal income for Elko County.

TABLE 3-7

MINERAL POTENTIAL FOR THE
WELLS RESOURCE AREA[1]
(ACRES)

RCA	High Potential	Good Potential	Low Potential
Cherry Creek	——	102,900	259,355
Spruce/Goshute	211,700	176,700	1,628,783
Mary's River	43,700	11,900	365,962
O'Neil/Salmon Falls	163,900	500	518,855
Goose Creek	9,500	11,900	189,090
Pilot/Crittenden	48,500	18,200	473,885
Metropolis	51,900	42,900	500,751
Ruby/Wood Hills	7,000	4,100	311,335
TOTALS	536,200	369,100	4,248,016

[1] Mineral potential is for locatable minerals and phosphate only. Although the Wells RA has considerable potential for oil/gas and geothermal resources, available data is not sufficient to classify oil, gas or geothermal potential for the entire resource area.

Source: Nevada Bureau of Mines and Geology 1981, Great Basin GEM Joint Venture 1983a, 1983b.

TABLE 3-8

POPULATION SUMMARY FOR THE
WELLS RESOURCE AREA

Community	1980 Population	Projected Populations (High, Medium, Low) 1985	1990
Wells	1,200	6,200	8,200
		4,000	6,000
		1,800	2,000
Jackpot	800	1,900	2,400
		1,500	1,700
		1,100	1,200
West Wendover	395	1,100	1,400
		650	750
		370	450
Remaining Area	1,000	1,300	1,400
		1,000	1,000
		900	900
Total Wells RA	3,395	10,500	13,400
		7,150	9,450
		4,170	4,550

Sources: ARKIS Collaborative 1975, 1976 and Tubor Engineering Co. 1973

Services

Services account for 28 percent of the total work force for Elko County and 26 percent of total personal income. This section includes all businesses which focus on gaming and tourism revenues. Gross taxable gaming revenues for Elko County were over 39 million dollars in 1979.

Agriculture

Agriculture accounts for six percent of the personal income and employment in Elko County. However, agriculture is more important in the Wells RA than in the overall county, with approximately twice as many persons employed as farm workers compared to Elko County as a whole. Agriculture is dominated by the livestock industry in the Wells RA because of the short growing season.

Only 10 percent of the hay crop is sold, with the remainder being used by the local operators.

Mining

In 1980, mining accounted for 4.5 percent of total employment and 8.1 percent of total personal income for the county. Mining has the potential for becoming a much larger sector in the county. Impacts on existing communities would be most influenced by the location of the mineral development. The tax base in smaller communities is narrow. Therefore, these communities are ill-equipped to expand their social services in order to deal with a rapid change in population due to a mining boom. If the increased population was located within the city limits, then city taxes would increase revenues, but there would be a lag between the point at which additional social services would be necessary and the point at which increased revenue would become available.

Construction

Construction accounted for 6.7 percent of the total employment and 10.6 percent of personal income for Elko County in 1980. Construction contributed over 18 million dollars of direct and indirect personal income to Elko County that year.

Government

The combined local, state, and Federal government sector accounted for about 25 million dollars, or 18.1 percent of the total Elko County income during 1980, and employed 19 percent of the work force. Activity within the government sector generated total direct and indirect income amounting to $33.7 million during 1980.

Tax and Fiscal Structure

Taxable sales for Elko County amounted to $109.5 million for calendar year 1980. Elko County collected a 3.5 percent sales tax on sales within the county in 1980, which amounted to $3.8 million. The current sales tax rate has been increased to 5.75 percent.

BLM helps support the county's infrastructure through in-lieu-of-tax payments. In-lieu-of-tax payments are payments made to local government units having nontaxable Federal lands within their borders to compensate them for the burden resulting from the tax immunity of these lands. In fiscal year 1980, the in-lieu-of-tax payment to Elko County was $443,250 (Bureau of Land Management 1980a and Salicchi, personal communication). This payment was distributed to the county's road, general, and city funds, as well as to the convention center.

Payments from BLM also contribute to the county's revenue. These are as follows:

1. 50 percent of receipts from mineral sales are proportioned to counties ($248,320 to Elko County for FY 1981).

2. 4 percent of receipts from BLM land and material sales ($63,294 to Elko County for FY 1981).

3. 12 1/2 percent of grazing fee receipts ($159,801 to Elko County for FY 1981).

4. School fund allowances for children whose parents work or reside on BLM or Indian administered lands ($345,641 to Elko County for FY 1981).

In addition, the county benefits from the higher level of funding, 95 percent, provided by the Federal government for highways on Federal lands. Funding for highways on state land is limited to 75 percent.

TABLE 3-9

ELKO COUNTY EMPLOYMENT
(Full or Part Time)

CATEGORY	1976	1978	1980
Employers			
Farm	193	174	229
Non-farm	607	621	683
Wage and Salary Employees			
Farm	608	626	594
Mining	220	196	449
Construction	292	364	662
Manufacturing	52	142	178
Transportation	545	587	660
Trade	1,495	1,444	1,600
Finance, Insurance and Real Estate	192	212	245
Services	1,964	2,438	2,773
Gov't (State & Local)	1,291	1,447	1,474
Gov't (Federal)	309	355	372
Other Agriculture	28	27	36
TOTAL EMPLOYMENT	7,796	8,633	9,955

Source: Bureau of Economic Analysis 1980b

TABLE 3-10

ELKO COUNTY PERSONAL INCOME BY MAJOR SOURCE
(Thousands of Dollars)

Industry	1976	1978	1980
Farm	$3,687	$ 5,748	$ 8,368
Mining	3,065	3,166	11,016
Construction	5,245	7,826	14,422
Manufacturing	632	1,710	2,531
Transportation	8,914	11,374	14,880
Trade	14,306	15,032	18,973
Finance, Insurance and Real Estate	2,549	3,802	4,677
Services	19,130	28,222	35,725
Gov't (State & Local)	12,881	16,005	19,238
Gov't (Federal)	3,466	4,841	5,746
Other Agriculture	489	642	681
TOTAL EMPLOYMENT	$74,364	$98,368	$136,257
Per Capita Income (Dollars)	$ 6,542	$ 8,779	$10,640

Source: Bureau of Economic Analysis 1980a, b

Recreation and Wildlife

Hunting and fishing are the most significant recreation activities in the resource area. The Wells RA accounted for 38 percent of the total deer harvest and 42 percent of the nonresident hunters in the state in 1980. The total deer hunter days amounted to approximately 11,725 days, accounted for $487,000 in direct expenditures, $144,000 in direct personal income, and employed 20 persons within the resource area. Fishing provided for an estimated 65,100 visitor days of use in 1980. These visitors spend about $1.2 million of which $350,000 is income-related and providing for employment of 50 individuals.

Wilderness Recreation Use and User Day Benefits

The USFS estimated a value of $8 to $12 per 12 hour visitor day of wilderness use in 1981 (Walsh et al. 1981). Using a $10 per visitor day value, Table 3-11 displays estimated current and projected visitor day use and user day benefits derived from the four wilderness study areas both with and without wilderness designation.

TABLE 3-11

WSA AND WILDERNESS AREA RECREATION
USER DAY BENEFITS FOR
THE WELLS RESOURCE AREA

	Bluebell	Goshute Peak	South Pequop	Bad Lands	Totals
Existing Situation:					
Visitor Days	300	800	150	500	1,750
User Day Benefits[1]	$3,000	$8,000	$1,500	$5,000	$17,500
Year 2004 (without wilderness designation)					
Visitor Days	600	1,500	300	1,000	3,400
User Day Benefits[1]	$6,000	$15,000	$3,000	$10,000	$34,000
Year 2004 (with wilderness designation)					
Visitor Days	1,500	3,000	1,000	2,000	7,500
User Day Benefits[1]	$15,000	$30,000	$10,000	$20,000	$75,000

[1] Calculated by multiplying the visitor days by visitor day value

Source: Bureau of Land Management 1982f

Livestock Grazing

Livestock production is a major industry within the Wells RA. In 1980 there were 23 ranches which ran over 1,000 animal units, 12 ranches with 500 to 1,000 animal units, and 46 ranches with less than 500 animal units for a total of 81 operators within the RA. Public land provides 25 to 30 percent of total forage consumed, and the land base accounts for approximately six percent of the income and four percent of the employment. These figures, however, seriously understate the importance of public lands to the local livestock industry. Livestock grazing is an economic entity here only because of the lower costs of grazing on public lands versus dependence on feedlot operations. A study of ranching operations in northern Nevada shows that one of the variables that ranchers are most sensitive to is the date that they can replace purchased feed with grazing on public lands. Summary table S-2 depicts the livestock grazing economic summary for the Wells RA.

Ranch Budgets

Ranch budgets were developed by the Economics, Statistics, and Cooperatives Service from infor-

tion supplied by 10 area producers and from BLM sources. It must be emphasized that the ranch types represent "typical" ranches only. Within the Wells RA, each ranch has a set of unique characteristics which will cause its operation to differ from those of the "typical" ranch. Ranches in the Wells RA were placed in five categories, depending upon size and class of livestock:

1. Small - 0 to 199 head
2. Medium - 200 to 499 head
3. Medium/Large - 500 to 999 head
4. Large - over 1,000 head
5. Sheep ranch

Market Values of AUMs

The permit market value of an AUM ranges from $25 to $60 per AUM, with a mean value of $50 in northern Nevada (Falk 1980, Calender 1980). The value of a permit is affected by the number of range improvements, water availability, dependence on Federal AUMs, and whether the allotment is grazed in common or by one permittee. Although BLM does not recognize a grazing permit as real property, these permits have a market value which contributes to the economic structure of a ranch. These permits can be sold in the market place or used as collateral for loans. Using the value of $50 per AUM, BLM grazing permits currently contribute approximately $19 million to the wealth of resource area operators.

Wild Horses

The value of forage wild horses consume can be estimated by obtaining the total AUMs of forage consumed and multiplying that figure by the market value of an AUM, which was $7.88 in 1980 (Economics, Statistics, and Coopertive Service et al. 1980). Wild horses consumed approximately $65,000 worth of forage in 1980.

Wild horses are gathered periodically to maintain a stable population. Gathering costs range from $60 to $100 per animal (Frei, personal communication). A figure of $91 per horse (delivered to the Palomino Valley adoption center near Reno by the contractor) has been reported for the Wells RA. A total of 711 wild horses gathered in the Wells RA in 1980 resulted in a total expenditure of $64,701.

Woodland Products

Demand is expected to increase for all wood products as residential heating costs and populations increase. Table 3-6 shows an economic summary for sales of forest products in the Wells RA.

13. SOCIAL VALUES AND PUBLIC ATTITUDES

Informal discussions were conducted in the summer of 1981 to determine public attitudes and perceptions about how lands in the Wells RA should be managed. Several individuals were interviewed concerning the identified issues. In addition, data was extracted from BLM planning area analyses, newspaper articles, input from public officials, public comments, and from BLM resource specialists and files.

Lands

The checkerboard land pattern was generally recognized to be a problem. Ranchers were one group highly sensitive to this issue. If public or private land could be consolidated, ranchers felt that management would be enhanced. However, ranchers felt that exchanges between private and public sectors could be very difficult because private lands usually contain the water, making private lands much more valuable than public lands. One rancher stated that, unfortunately, both public and private interests are interested in the same lands.

Concern over checkerboard land ownership was also voiced in regard to recreational pursuits. There are checkerboard areas along the Ruby Mountains that are desireable for recreational access. Interviewees (12 percent) said that they would like to gain access to the Ruby Mountains so that they could do more hunting, fishing, hiking, and snowmobiling.

It is the city and county officials who are most aware of the need for land ownership adjustments for public purposes. These officials are concerned that their cities are landlocked by BLM administered land. Officials from all the cities in the resource area stated they had needs for expansion for sewer and water systems, recreational development, housing, and other public purpose uses.

The city of Wells would be impacted dramatically by the influx of 2,200 workers for the construction of the Thousand Springs Power Plant expected to begin after 1985. The need for land for expansion was voiced by public officials and local businessmen. The Wells City Manager said that the population impact will be felt in Wells even if the construction workers and associated populations totaling 5,000 to 7,000 are located at the construction site rather than in the city itself. The new population would use social services and recreational facilities in Wells.

The cities of Jackpot and Wendover are additional examples of high growth areas within the Wells RA. These cities are situated on the Nevada stateline, an attractive location for the development of casinos, restaurants, hotels and motels, and other industry services designed to appeal to the increasing traffic from adjacent states. With the anticipated growth, city and county officials will continue to request BLM lands for various public purposes.

Corridors

At the time of the social analysis interviews regarding RMP issues, corridors were not an issue. Later input from the utility industry and the need for a Bureau statewide corridor system, prompted its inclusion. The intensity of public interest in corridors is believed to be generally low, primarily because of a general lack of knowledge regarding corridors. The key interested public in this issue are the utility and transportation companies who would favor corridor designation and/or identification.

Access

About 94 percent of those interviewed want access through private lands to public lands. Most also recognize that the private landowner has rights that must be respected. A typical statement was that public access through private lands to public lands should be reasonable and that problem situations should be dealt with on a case-by-case basis.

The ranchers in the area who were interviewed were generally in agreement with the need for public access through private land. However, they were more sensitive than others about having their rights and property protected. A small percentage (6 percent) of the sample was against public access through private lands. This attitude was typified by the following comment from a rancher's family member: "Gates are left open and vandalism occurs. The public doesn't deserve access through private lands. A great number will have to suffer because of a few careless individuals".

Recreation

Recreation on public lands seems to mean hunting, fishing, and ORV use to most residents of the resource area. The great majority (90 percent) of the interviewees did not express criticism of or complaints against the recreational program in the area. About 50 percent of those interviewed offered suggestions regarding lands that have possible recreational potential. The remainder did not feel there was need for, or did not care about, any further recreational development. Individuals in favor of additional development expressed a preference for campground facilities as the most appropriate recreation improvements.

Seventeen percent of the people interviewed expressed the concern that developed areas bring in more people and pollute the area. They did not want to see public lands developed and were more interested in a wilderness experience.

Off-road vehicle use restrictions were favored by a majority (90 percent) of interviewees. It was stated that ORV operators damage and scar the land. Snowmobiles, 4x4s, and motorbikes were mentioned as vehicles that need to be restricted to specific areas or roads.

Wilderness

Social analysis interviewees did not deal with the wilderness issue. However, numerous public contacts and research by BLM personnel have enabled the Bureau to assess public attitudes.

Local and Regional Sentiment Toward Wilderness

The General Plan for Elko County (Smith 1971) recommends the "conscious preservation of open space. These essentially take the form of wilderness and scenic areas, drainage basins, and areas of historical or cultural significance. Most require a bare minimum of maintenance other than a policy prohibition of any development which would change their intrinsic character." This indicates a consistency with wilderness preservation.

The local sentiment of persons in Elko and surrounding rural counties would disagree with the statment quoted above from the Elko County General Plan. Most persons in the region seem to resent any wilderness area designation, whether Federal or state, because they see such designation as a "lock up" of the resources and a "lock out" of the general public.

State Sentiment Toward Wilderness

In 1981 Senator Howard Cannon in a survey of Nevadans found there was overall support (50% support to 41% nonsupport) for designating certain U.S. Forest Service Rare II areas as wilderness.

A Statewide Outdoor Recreation Plan survey in 1981 recorded the following attitudes to the question "do Nevada's unique natural and unusual areas need preserving?" Statewide, 92% agree or strongly agree, 3% disagree and 5% did not respond. Since this study used "preservation of unique natural and unusual areas" rather than "wilderness" its application to wilderness designation may be limited (Nevada Division of State Parks 1982).

National opinion surveys indicate the United States population is divided on the subject of wilderness. A 1977 survey of Opinion Research Corporation (ORC) about wilderness in general showed 7% of the population thought there was too much wilderness; 32% too little wilderness; and 46% thought the amount was about right. In another survey by ORC (1978) Americans rated wilderness fifth (after clean air, clean water, oil and natural gas) as basic resources in short supply.

Sentiment of Conservation and Preservation Groups Toward Wilderness

National and state conservation and preservation groups support future designation of wilderness areas in the Basin and Range Physiographic Province. Most existing wilderness areas are forested alpine types and these groups point out that desert-type wilderness areas are needed for future generations to enjoy.

Livestock Grazing

Lack of local control over public lands is a concern in the area. Mention of the "Sagebrush Rebellion" provoked mixed comments. The local ranchers are strongly in favor of state ownership of the public lands, while many other residents feel that state ownership would just lead to development, which might lead to reductions in land for public uses.

In general, the residents of the resource area perceive the livestock industry to be both socially and economically important to the community. Residents are very aware that public lands support the livestock industry in Nevada. In fact, 90 percent of the persons interviewed for the social analysis mentioned ranching as the number one industry associated with public lands. Mining and recreation were next in order.

The ranchers interviewed place a high value on the livestyle associated with ranching. All the ranchers said they liked ranching and would not consider leaving ranching unless they went bankrupt or suffered a physical debilitation. Most of the ranchers come from ranching families and felt that another way of life would be difficult at best. Ranching is also viewed by ranchers as being good for family life; in fact, many ranches in the resource area are totally family operated.

All the ranchers interviewed thought range forage was in an improving condition. They thought that the range had been overgrazed in the late 1800's or in the 1930's but that, in past years, grazing pressure has been reduced and range forage production has been improving. The general opinion was that the range was in poor condition in certain areas and average or good, in others.

The ranchers all said that they would not run more cattle on their BLM allotments, even if they were allowed to. They were aware that the land can support only so many cattle before forage production starts to decline. Half of the interviewees stated that the amount of rainfall was the key to stocking rates in a particular year. In drought years such as 1981, they could not stock the range as fully as in other years. Some ranchers (30 percent) state that they could run more cattle only if they could improve the quantity and quality of water developments on their allotments.

Wild Horses

Local attitudes toward wild horses are fairly consistent. All the ranchers interviewed thought that there are too many wild horses on the range

competing with cattle. Since the ranching community is highly valued socially, culturally, and wild horse numbers should be reduced, but not entirely eliminated.

The idea of maintaining at least a small herd was voiced by almost every interviewee. One rancher stated that "if we want more wild horses after we reduce them, then someone can just leave a gate open and domestic horses will propagate the range again."

Wildlife Habitat

The majority (85 percent) of those interviewed thought that the range, for the most part, was not overgrazed and that wildlife habitat was in good shape. Most interviewees (78 percent of the total and 80 percent of the ranchers) did not think that cattle competed for forage with other big game such as deer or antelope. It was said that deer and antelope eat different types of forage, can get up high to forage where cattle cannot, and are much more intelligent in seeking forage.

The ranching community generally felt that wildlife had a right to exist. However, they did not feel that wildlife forage needs should be put before cattle or sheep needs. Ranchers did not want to see their AUMs reduced so that wildlife numbers could be increased.

Multiple-use management was cited several times as an excellent management plan. One interviewee said that "if one manages for wildlife, they are also helping livestock. For instance, water developments and seedings are beneficial to both."

Riparian and Stream Habitat Rehabilitation

The great majority of interviewees were not aware of the declining riparian habitat condition. This may result from the fact that the poor condition of many riparian areas has existed for decades.

Most persons felt that fencing riparian areas to improve them and the associated stream was not needed. Some mentioned the maintenance expense and others said that these fences would keep big game from gaining access to the water.

Several people thought that better livestock grazing management was the answer and not fencing. One person stated that "cattle do not create that much of a problem on good fishing streams because they usually cannot penetrate the willows and brush. It is only when the brush and willows have been cleared away that will cause the stream to be affected." Another person thought that small dams and river projects, possibly built by CETA or volunteer workers, could really improve the riparian and aquatic habitat.

Woodland Products

Public attitudes toward woodland products are divided. About 65 percent of those interviewed wanted some green fuelwood areas. However, they were aware that this resource is limited in Nevada and thus cutting should be limited.

Most interviewees thought that there was plenty of dead wood available and that only a few greenwood areas might be necessary. Many persons also thought that selected cutting areas should be for pinyon pine and juniper rather than for aspen. The main thrust of the majority view was that green fuelwood areas could be established as long as proper planning and management techniques were used. About 29 percent were totally against the cutting of greenwood. These people wanted the aesthetic value of living trees to be protected. They thought that there were relatively few trees in Nevada and all of them should be protected. About 88 percent were generally positive regarding the monetary fees for posts and poles. They did not object to the charge and felt that this type of management was necessary to protect the resource.

Minerals

Local residents recognize that the mining industry is very important to their local economy. About 68 percent, (generally ranchers, miners, businessmen, and local government officials) did not feel that mining in the area was overly destructive to the land. In fact, one local businessman in Jackpot said that his area was a tourist attraction mainly because of the mining activity, with all the remains and tailings. The 1872 mining law was criticized by some persons. They said that this law gave too much freedom to the miners without requiring sufficient environmental constraints to protect the natural environment.

Four mining executives, each from a different mining company, had very positive attitudes toward BLM and their relationship with the Bureau. They thought that the resource area was excellent for the mining industry because of all

the public lands and the lack of restrictions. They generally had favorable attitudes toward the new mining regulations. One said that he liked the regulations "as long as they remain flexible and subject to interpretation by field personnel."

The mining executives thought very highly of their industry. One said that the mining industry is "providing outstanding leadership for reclamation." Another mine official noted that the mining industry has the capability of being the most destructive industry on public lands. However, if mining companies plan ahead and budget money for reclamation, they can leave the land in better condition than before the mineral extraction.

14. VEGETATION

Vegetation Types

The Wells RA supports vegetation typical of the Great Basin region. The extremes of climate, elevation, exposure, and soil type all combine to produce a diverse environment for a variety of vegetation types. The resource area contains 18 broad vegetation types which are summarized in Table 3-12. This table and Figure 3-1 will suggest where the various plant types occur on the landscape. Vegetation types were identified according to the current vegetation aspect and placed into standard type classification presented in BLM Manual 1265. Important vegetation types are described below.

Sagebrush - rabbitbrush is the dominant vegetation type covering almost two-thirds of the resource area. The pinyon pine-juniper vegetation type is the next most prevalent, covering almost one-fifth of the area. Other common vegetation types include saltbush, greasewood, and grassland.

Riparian vegetation is important in the Wells RA because it provides quality forage and cover for wildlife, livestock, fisheries, and wild horses. Riparian areas are dominated by plants which include willow, cottonwood, aspen, wild rose, currant and a variety of grasses and sedges. This type of vegetation represents less than two-tenths of one percent (0.2% of the total resource area acreage).

The wetland vegetation of the Wells RA is very productive, heavily used by livestock, and mostly in poor ecologic condition. Wetland vegetation is characterized by meadow areas (included in the meadow vegetation type) dominated by inland saltgrass, rushes and sedges and surrounded by greasewood or rabbitbrush. There is an estimated 13,000 acres of wetland vegetation in the resource area.

Condition

Estimates of ecologic condition are based on the comparison of what the site is producing now to what that site is naturally capable of producing. The present condition, in many cases in the Wells RA, is a result of overgrazing practices which occurred many years ago. These practices resulted in the change of the plant composition from desirable to undesirable species. In some areas present grazing practices are producing an improvement in range condition. However, the improvement in condition is very slow. Without improved range management practices and treatments, present range conditions would not be expected to improve substantially within a realistic time frame. On areas under AMPs and grazing systems designed to allow for periodic food storage, seed production, and seedling establishment of desirable plants, ecologic range condition improves relatively quickly.

Determination of ecologic range condition for the Wells RA has not been completed since analysis of both soils and vegetation resources is required. An SCS Cooperative Soils Survey is in progress and scheduled for completion in 1988. As survey information becomes available, condition and trend studies will be finalized. Estimates of ecologic range condition over the Wells RA are as follows: 20 percent, poor; 54 percent, fair; 25 percent, good and one percent, excellent. For a summary of condition by RCA and estimates of range condition for allotment categorization, see Appendix 2. These estimates are based on the professional judgment of the Wells RA Staff.

Season of Use

An understanding of the growth cycles of forage species is important to the goal of maintaining a sustained yield and to the development of sound grazing management systems. Varying the season of grazing use and allowing for periodic rest can improve vigor and production while maintaining the same level of use.

TABLE 3-12
VEGETATION TYPES AND THEIR CHARACTERISTICS
OF THE WELLS RESOURCE AREA

Vegetation Type	Acres	% of Total Acres	Elevation (Feet)	AVERAGE Precipitation	Soil Characteristics	Landforms	Associated Species[1]
Grassland	170,859	4	4,300-10,300	6-16+	varying	All	Saltgrass, basin wildrye, crested wheatgrass, Idaho fescue, galleta, bluebunch wheatgrass, squirreltail, cheatgrass, big sagebrush, little rabbitbrush, horsebrush
Meadowland	13,043	<1	4,900- 8,000	6-16+	deep, poorly drained silty or sandy textured	floodplains and drainages	Rushes, sedges, saltgrass, bluegrass species, willow, Wood's rose, foxtail, black greasewood
Perennial Forbs	547	<1	7,100- 9,400	14-16+	varying	sideslopes of mountains and hills	Beardtongues, mules ear, arrowleaf balsamroot lupine, Idaho fescue, bluebunch wheatgrass
Sagebrush-Rabbitbrush	2,555,974	60	4,700-10,300	8-16+	varying	All	Low sagebrush, black sagebrush, basin big sagebrush, mountain big sagebrush, Wyoming big sagebrush, little rabbitbrush, rubber rabbitbrush, squirreltail, Indian ricegrass, bluebunch wheatgrass
Mountain shrub	20,304	<1	6,300-10,300	12-16+	shallow to deep, gravelly, loamy textured	mountain sideslopes	snowberry, serviceberry, bitterbrush, mountain mahogany, mountain big sagebrush, bluebunch wheatgrass
Conifer	18,151	<1	7,500-10,200	14-16+	deep, cobbly or gravelly loamy textured	mountains - primarily north slopes	White fir, bristlecone pine, Englemann spruce, snowberry, limber pine
Waste	339	<1	4,300-10,300	6-16+	unknown	All	Vegetated areas which cannot be grazed
Barren	9,774	<1	4,300-10,300	6-16+	alkaline-saline areas or nonsoil	All	Devoid of vegetation - active sand dunes, playa, talus slopes, rock outcrop

TABLE 3-12 (Continued)

VEGETATION TYPES AND THEIR CHARACTERISTICS
OF THE WELLS RESOURCE AREA

Vegetation Type	Acres	% of Total Acres	Elevation (Feet)	AVERAGE Precipitation	Soil Characteristic	Landforms	Associated Species[1]
Pinyon-Juniper	706,191	17	5,900- 9,000	10-16+	shallow and gravelly or stony	mountains and hills, upper alluvial fans	Pinyon pine, Utah juniper, squirreltail, low sagebrush, bluebunch wheatgrass, Indian ricegrass, bluegrass species
Broadleaf Trees	6,266	<1	6,200- 8,900	12-16+	shallow to deep, gravelly, loamy textured	mountain sideslopes (primarily north slopes) and drainages	Aspen, curlleaf mahogany, mountain brome, big sagebrush, elderberry, chokecherry, Idaho fescue
Saltbush	329,276	8	4,300- 6,000	6-10	saline or droughty	drainages, lower alluvial fans, basin floors	Shadscale, Nuttall saltbush, four-wing saltbush, Idaho fescue
Greasewood	281,714	7	4,300- 6,000	6-10	deep saline alkali or droughty	floodplains, lower alluvial fans or basin floors	Black greasewood, saltgrass, big sagebrush
Winterfat	95,920	2	4,300- 6,000	6-10	deep silty or sandy textured	floodplains, drainages, and lower alluvial fans	Winterfat, halogeton, Indian ricegrass, little rabbitbrush, squirreltail, bud sagebrush
Desert shrub	46,914	1	4,300- 6,000	6-10	varying	basin floors, drainages, and lower alluvial fans	Horsebrush, Mormon tea, spiny hopsage, cliffrose, low sagebrush
Half shrub	9,328	<1	4,300- 6,000	6-10	saline-alkali or droughty	basin floors	Green molly kochia, iodinebush, halogeton, black greasewood

TABLE 3-12 (Continued)

VEGETATION TYPES AND THEIR CHARACTERISTICS
OF THE WELLS RESOURCE AREA

Vegetation Type	Acres	% of Total Acres	Elevation (Feet)	AVERAGE Precipitation	Soil Characteristic	Landforms	Associated Species[1]
Annuals	9,557	<1	4,300-10,300	6-16+	varying	All	Tansy mustard, Russian thistle, clasping pepperweed, pigweed, cheatgrass, halogeton
TOTALS	4,274,757	100					

[1] Scientific names can be found in Appendix 6

Source: Bureau of Land Management 1982b

In the Wells RA, lack of adequate sources of spring forage contributes to the decrease in livestock forage and range condition. Native ranges have been repeatedly grazed during the critical growth period reducing both the quality and quantity of forage and cover.

The critical growth period for most of the perennial grass species in the Wells RA is approximately early May through mid-July with growth beginning generally by early April. This early growth uses carbohydrate root reserves stored the previous year during the critical growth period. By mid-July, an ungrazed plant replenishes its root reserves although it will not complete its life cycle through the seed ripe stage until early August.

If a plant is unable to replenish its root reserves because of moisture conditions or grazing during the critical growth period, it will progress into winter dormancy with a deficit in its energy reserve. If this cycle is repeated yearly, this energy deficit increases until the plant can no longer maintain itself and dies. In periods of drought even vigorous plants with adequate energy reserves are under severe stress. Plants going into a drought period with a severely depleted energy supply will be unable to survive.

The critical growth period for cold desert shrub species, primarily winterfat, is during its active growth period which may begin as early as March 1 and continue as late as October 31. Winterfat has an extremely high tolerance to winter grazing. As much as 75 percent of the foliage may be used during the winter dormant period with little effect on plant vigor; anything more than light grazing during active growth periods results in reduced plant vigor. Even light grazing during the summer may preclude seed production. In order to improve and maintain winterfat range, spring and summer grazing use should be discontinued.

Poisonous Plants

The most common poisonous plants found within the Wells RA are greasewood and halogeton. Greasewood occurs in dense stands in alkaline flats, valley bottoms, and along washes where the soils tend to be saline. Greasewood is toxic to sheep when it is eaten with little or no other forage. Halogeton occupies disturbed communities at lower elevations and is toxic to sheep and cattle. Other poisonous plants exist in the Wells RA in lesser abundance and do not have as great an impact on grazing livestock (Table 3-13).

TABLE 3-13

POISONOUS PLANTS OF THE WELLS RESOURCE AREA

Scientific Name	Common Names
Sarcobatus vermiculatus	Greasewood
Halogeton glomeratus	Halogeton
Tetradymia glabrata	Horsebrush
Delphinium andersonii (and other species)	Larkspur
Astragalus spp.	Locoweed
Astragalus miser var. oblongifolius	Poisonvetch
Prunus virginiana	Chokecherry
Zigadenus paniculatus and Z. venenosus	Death camas
Lupinus caudatus (and other species)	Lupine
Cicuta douglasii	Water hemlock
Nicotiana attenuata	Coyote tobacco
Helenium hoopesii	Orange sneezeweed
Equisetum arvense	Meadow horsetail

Source: Bureau of Land Management 1982b

Threatened, Endangered, and Sensitive Species

In the Wells RA, there are no Federally listed threatened or endangered plants. The following six species, however, have been listed in the Federal Register (Vol. 45, No. 242, December 15, 1980) as candidates for addition to the national list of endangered and threatened plants and are known to exist within the Wells RA:

Scientific Name	Common Name
Astragalus lentiginosus var. latus	Broadpod freckled milk vetch
Coryphantha vivipara var. rosea	None
Eriogonum argophyllum	Silver leaf buckwheat
Lepidium nanum	None
Sclerocactus pubispinus	Great Basin fishhook cactus
Thelypodium sagittatum var. ovalifolium	None

Additionally, there are ten other candidates threatened or endangered species that occur on adjacent lands which have a potential of being found within the resource area. These are:

Scientific Name	Common Name
Antennaria arcuata	Arching pussytoes
Astragalus pterocarpus	Winged milk-vetch
Astragalus robbinsii var. occidentalis	Lamoille Canyon milkvetch
Cymopterus nivalis	None
Erigeron latus	Broad fleabane
Hackelia ophiobia	None
Ivesia rhypara	Grimes ivesia
Penstemon procerus var. modestus	Ruby Mountain penstemon
Phacelia nevadensis	None
Primula capillaris	Ruby Mountain primrose

There are also five species which are listed in the Nevada State Museum's 1982 Threatened and Endangered Plant Handbook as "species of special concern" and are as follows:

Scientific Name	Common Name
Artemisia packardiae	None
Artemisia papposa	Fuzzy sandwort
Cryptantha interrupta	Interrupted cryptantha
Haplopappus watsonii	None
Opuntia pulchella	Sand cholla

In addition to the legal mandate and the protection afforded these species through the Endangered Species Act, the state of Nevada has declared Eriogonum argophyllum to be "critically endangered" and as such, is completely protected. According to Nevada Revised Statute (NRS) 527.270: "Any species declared to be threatened with extinction shall be placed on the list of fully protected species, and no member of its kind may be removed or destroyed at any time by any means except under special permit issued by the state forester firewarden." Eriogonum argophyllum is the only species so protected in the Wells RA.

The complete removal of even one plant from any of these populations would be detrimental. Grazing does not seem to be having a harmful effect on any of the known populations of these species (Foster 1980).

15. SOILS

The Soil Conservation Service has completed preliminary soil mapping on approximately 25 percent of the Wells RA. The existing completed soils survey information for the entire resource area is contained in the Northeast Nevada Interagency Cooperative Land Use Study (1939-1941). This survey has not proved adequate for planning purposes. Therefore, the following generalizations are based on experience and the results of the ongoing soil survey in Elko County.

Soil productivity in the Wells RA as a whole is limited primarily by two climatic factors: the relatively short growing season and low levels of precipitation. Aside from irrigated hay production, commerical farming historically has proved to be impractical. Site productivity is limited primarily by the soils' ability to supply moisture for plant growth. Because of low summer precipitation and high temperatures, many soils become dry before the end of the growing season and plant growth terminates. A soil's water supplying capacity is determined by a number of interrelated factors including physiographic position and soil properties.

The most productive nonirrigated soils in the Wells RA are the poorly drained soils lying on the floodplains of perennial streams. The water table remains high enough in these soils to sustain plant growth throughout the growing season. Productivity, however, increases on sites that receive additional runoff even in the absence of a high water table.

The second most productive soils group in the Wells RA are the moderately deep to deep mountain soils at elevations greater than 6,300 feet. These soils receive more precipitation than those at lower elevations, and enough moisture generally can be stored to encourage good plant growth. The less productive mountain soils are generally shallow to bedrock and/or contain large volumes of stones or coarse fragments.

The line drawing in Figure 3-1 illustrates the physiography of a typical alluvial fan piedmont landform. Except for the soils along some drainages, soil productivity on piedmont areas is generally average to low. Soils on the older dissected fan surfaces frequently have subsurface horizons such as claypans or silica-cemented or lime hardpans which limit the volume of soil available for moisture storage. Low infiltration rates, salinity, and alkalinity frequently limit the productivity of soils on the lower fan areas and basin floors.

All soils in the Wells RA are susceptible to wind and water erosion. However, there is no information available which accurately portrays the existing situation in the Wells RA. The most serious erosion problem which has been recognized to date is common to other western rangelands; many stream channels in alluvial areas have been downcut and have become entrenched.

16. WATER

Surface Water

The Wells RA generally consists of enclosed drainage basins. Surface waters flow into the lowest valley areas and evaporate or infiltrate into the soil. Most streams in the resource area are intermittent and flow only during the spring and early summer. The perennial streams that do occur generally drain mountain watersheds. When the streams flow onto upper alluvial fans, their flows break up into numerous channels and are lost due to infiltration, evaporation, and transpiration. The perennial tributaries of the Snake River in the northern part of the resource area are an exception to this drainage pattern. Another exception is the Humboldt River which drains the northeastern part of the resource area and later empties into a sink in western Nevada.

Seasonal runoff generally begins in April or May with peak flow occurring in May; low flows in perennial streams occur in December and January.

Springs in the Wells RA vary in size from small seeps to those with flows exceeding 50 gallons per minute. Generally, however, the springs in the area are small and in many cases cannot sustain a year-long flow.

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. The northern half of resource area has considerably more surface water than the southern half.

Groundwater

Groundwater is the primary water source in the resource area. Where surface sources are

inadequate, wells are used to supply water for stock-watering and domestic purposes. A few wells provide water for irrigation purposes. Most wells are drilled into the alluvial materials (the major water bearing zone) in valley bottoms and alluvial fans. An adequate supply of water for nonagricultural purposes usually can be obtained at depths of less than 500 feet. Although saline water sometimes occurs in low lying basin areas, the groundwater quality is generally good. Runoff from the higher elevation areas within the drainage area is responsible for recharge of the groundwater aquifers.

Water Quantity

The Wells RA is recognized as one of the highest water yielding areas in Nevada. Stream discharges, however, are not accurately known because the streams' intermittent flow pattern makes gaging difficult. Annual runoff has been estimated at 600,000 acre feet. Snowmelt and rain occurring at elevations above 5,000 feet are the primary source of this runoff. The annual recharge to the groundwater system has been estimated at 250,000 acre feet and the area's total storage at 20 million acre feet (Nevada State Engineer's Office, Division of Water Resources 1971).

Water Quality

Surface water quality varies within the Wells RA. From 1979 through 1982, BLM conducted a water quality survey which included sampling 39 streams and 15 springs during the high water flow, high temperature and low water flow periods. The results of the survey indicate that surface water quality is adequate for livestock watering and irrigation purposes. The suitability of surface water for domestic uses depends upon the location of the source.

17. AIR QUALITY

The air quality in the Wells RA is generally good. The major contributor to air pollution is particulate matter resulting from wind-blown dust, especially from disturbed areas. Steptoe Valley, located on the southern boundary of the resource area, is the only nonattainment area (nonattainment for sulphur dioxide) in the Wells RA. A nonattainment area is an area that exceeds established standards for one or more pollutants and must be reduced to or below the established standard.

18. CULTURAL RESOURCES

Archaeological inventory of the Wells RA is in its very early stages. Less than one percent of the area has been inventoried with roughly 1,100 archaeological and historical sites recorded to date.

Prehistoric sites range from isolated artifacts (such as projectile points lost during hunting) to large semipermanent winter camps. The most common site is a small lithic scatter, which is usually the remains of a temporary camp or stopping location. Rock shelters with stratified deposits, antelope traps, rock art sites, and lithic procurement areas are also present.

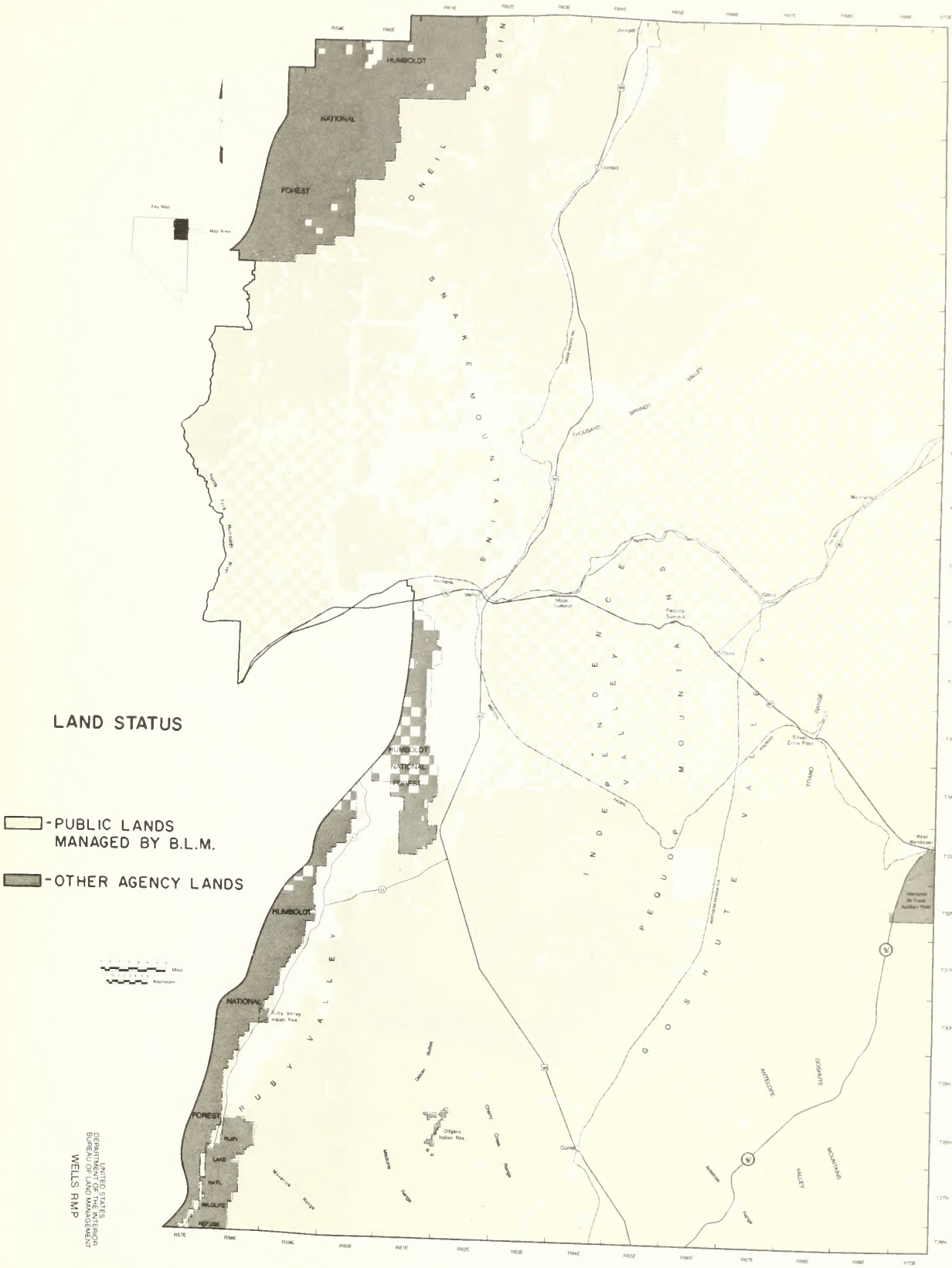
The limited nature of the archaeological inventory makes it difficult to accurately predict site location. But, as a general rule, areas within a mile of permanent water sources and playa lake margins have a high probability of containing cultural materials. Moderate probability areas include pinyon pine belts in unwatered areas and areas one to two miles from springs and unwatered foothills. Low probability areas include playa bottoms and unwatered mountainous areas.

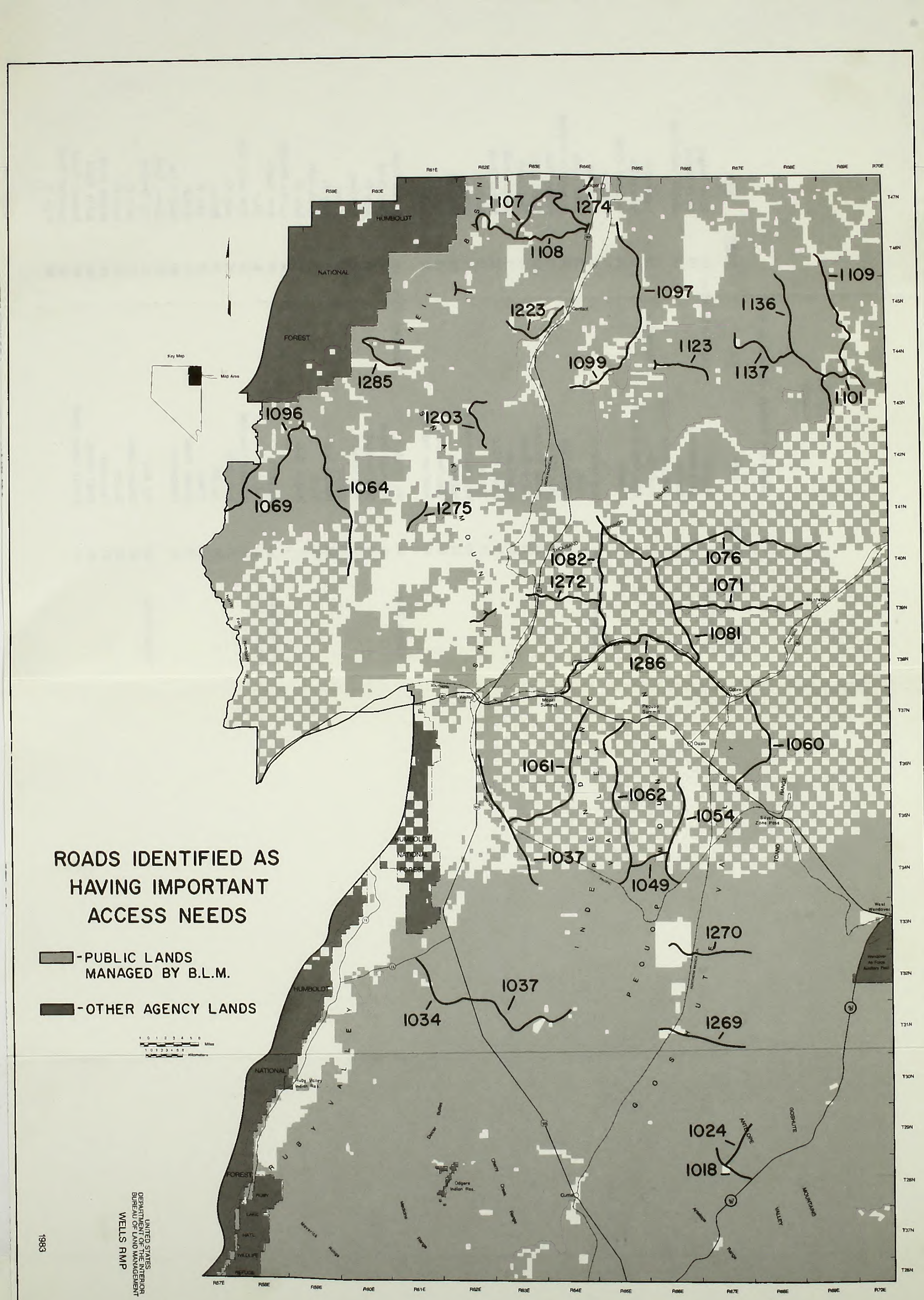
The first Euro-American entrance into the region was by fur trappers in the 1820's. A variety of historic sites are located in the Wells RA. Two items of national importance are portions of the California Emigrant Trail, and railroad grades and camps from the construction of the first transcontinental railroad. Other historic sites include mining camps, homesteads, ranches, and abandoned hunting camps.

19. VISUAL RESOURCES

The Wells RA contains a variety of scenic qualities which have been classified into visual resource management classes following BLM Manual 8400. The Wells RA visual resource management inventory files contain information on management classes and their development. In much of the resource area there are 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. In the extreme northwest portion of the resource area, topography is varied and dissected by several

hundred miles of perennial stream. This portion of the resource area is of very high scenic quality, primarily due to its diverse topography, adjacent scenic viewsheds (i.e. Jarbidge Mountains, views into Idaho) and abundance of streams. Most individuals viewing the resource area include motorists traveling on Interstate 80, Highway 93 and Alternate Highway 93. Recreationists tend to view visual attractions in the resource area from an off highway, backcountry perspective.


LAND STATUS
-PUBLIC LANDS MANAGED BY B.L.M.
-OTHER AGENCY LANDS
HUMBOLDT NATIONAL FOREST
RUBY LAKE NATL WILDLIFE REFUGE
O'NEIL BASIN
SNAKE MOUNTAINS
INDEPENDENCE MOUNTAINS
INDEPENDENCE VALLEY
PEQUOP MOUNTAINS
GOSHUTE VALLEY
RUBY VALLEY
TOANO RANGE
ANTELOPE MOUNTAINS
GOSHUTE VALLEY
Key Map
Map Area
Miles
Kilometers
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WELLS RMP
1983



ROADS IDENTIFIED AS HAVING IMPORTANT ACCESS NEEDS

-PUBLIC LANDS MANAGED BY B.L.M.

-OTHER AGENCY LANDS

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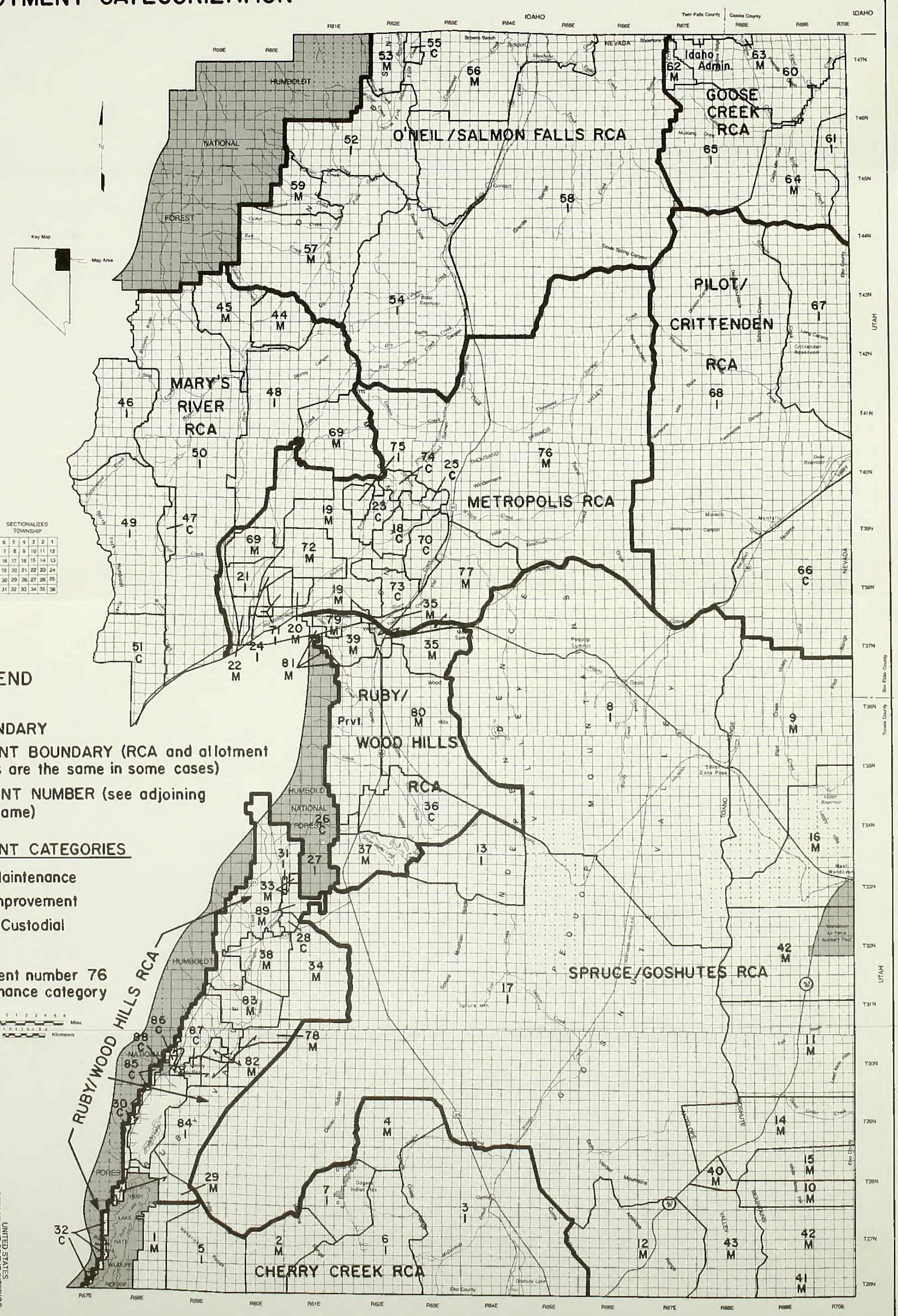
MAP 3-3
LEGEND

Allotment Numbers and Name by RCA

RCA	Number	Name
Cherry Creek	1	Ruby #9
	2	Bald Mountain
	3	Currie
	4	North Butte Valley
	5	Maverick
	6	West Cherry Creek
	7	Odgers
Spruce/Goshutes	8	Big Springs
	9	Pilot
	10	Ferber Flat
	11	Lead Hills
	12	Boone Springs
	13	White Horse
	14	Sugarloaf
	15	Leppy Hills
	16	Spruce
	40	West White Horse
	41	Badlands
	42	Utah/Nevada #1
	43	Antelope Valley
Mary's River	44	Hot Creek
	45	Anderson Creek
	46	Stag Mountain
	47	Pole Creek
	48	Stormy
	49	Devils Gate
	50	Deeth
	51	Morgan Hill
O'Neil/Salmon Falls	52	Buckhorn
	53	Gully
	54	Hubbard Vineyard
	55	Bear Creek
	56	Jackpot
	57	O'Neil
	58	Salmon River
	59	Cottonwood
Goose Creek	60	Big Bend
	61	Grouse Creek
	62	Barton
	63	Cavanaugh
	64	Bluff Creek
	65	Little Goose Creek
Pilot/Crittenden	66	Pilot Valley
	67	Dairy Valley
	68	Gamble Individual
Metropolis	18	Cedar Hill
	19	Metropolis
	20	Railroad Field
	21	Westside
	22	Spratling
	23	Trout Creek
	24	Metropolis Seeding
	25	Bishop Flat
	69	Black Butte
	70	Town Creek
	71	Rabbit Creek
	72	Bishop Creek
	73	Wells
	74	Dalton
	75	Antelope
	76	H.D.
	77	Holborn
Ruby/Wood Hills	26	Gordon Creek
	27	Warm Creek
	28	Ruby #4
	29	Harrison
	30	Forest
	31	Ruby #1
	32	South Ruby
	33	Ruby #2
	34	Curtis Springs
	35	Moor Summit
	36	Tobar
	37	SNow Water Lake
	38	Ruby #5
	39	Smiley
	78	Ruby #7
	79	Hylton
	80	Wood Hills
	81	Clover Creek
	82	Big Meadows
	83	Ruby #6
	84	Ruby #8
	85	Mayhew Creek
	86	Kelly Field
	87	Bennett Field
	88	Overland Creek
	89	Ruby #3

RESOURCE CONFLICT AREAS (RCA), GRAZING ALLOTMENTS AND ALLOTMENT CATEGORIZATION



LEGEND

- RCA BOUNDARY
- ALLOTMENT BOUNDARY (RCA and allotment boundaries are the same in some cases)
- 76 ALLOTMENT NUMBER (see adjoining page for name)

ALLOTMENT CATEGORIES

M-Maintenance
I-Improvement
C-Custodial

EXAMPLE:

76-Allotment number 76
M-Maintenance category

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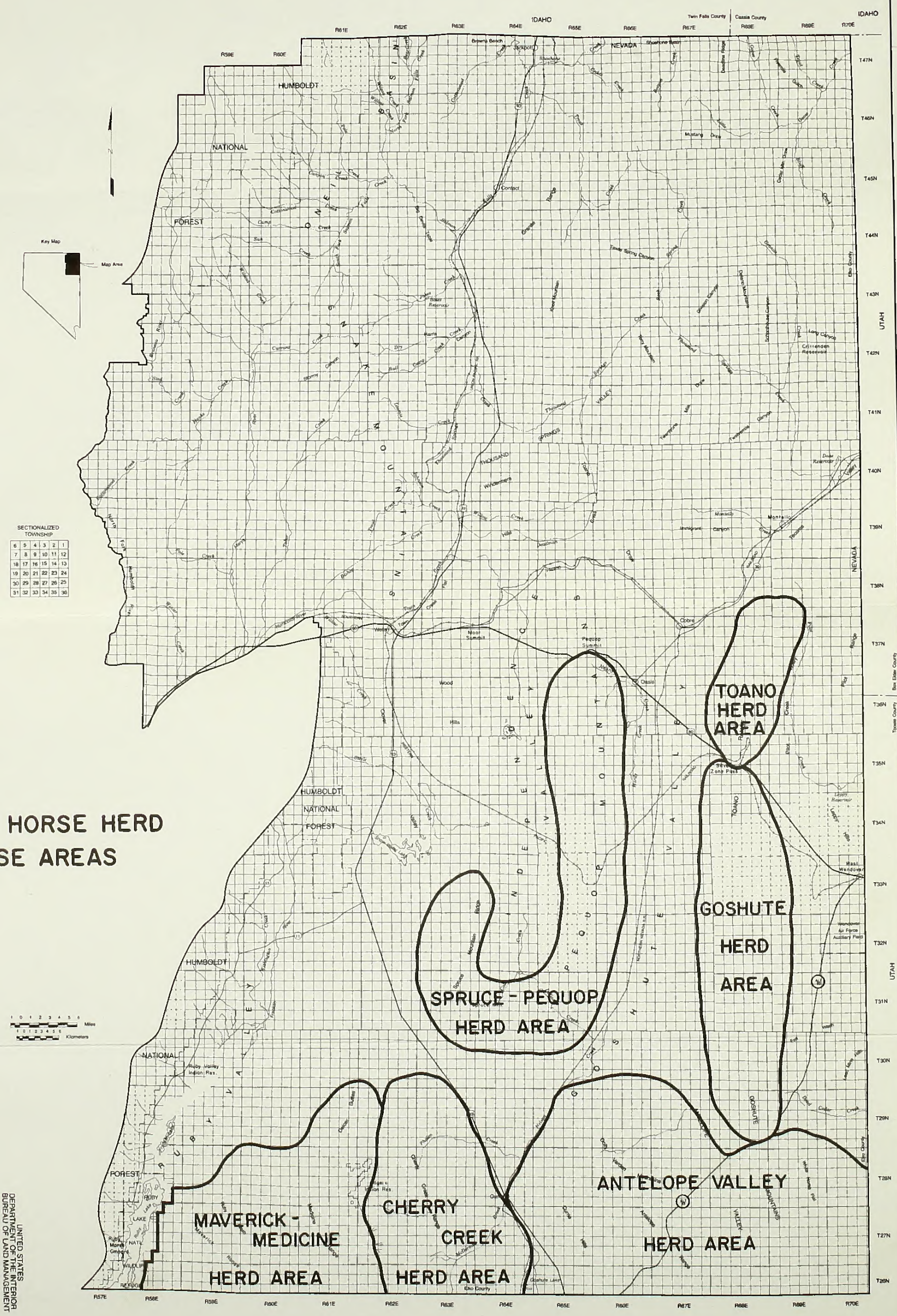
WILD HORSE HERD USE AREAS



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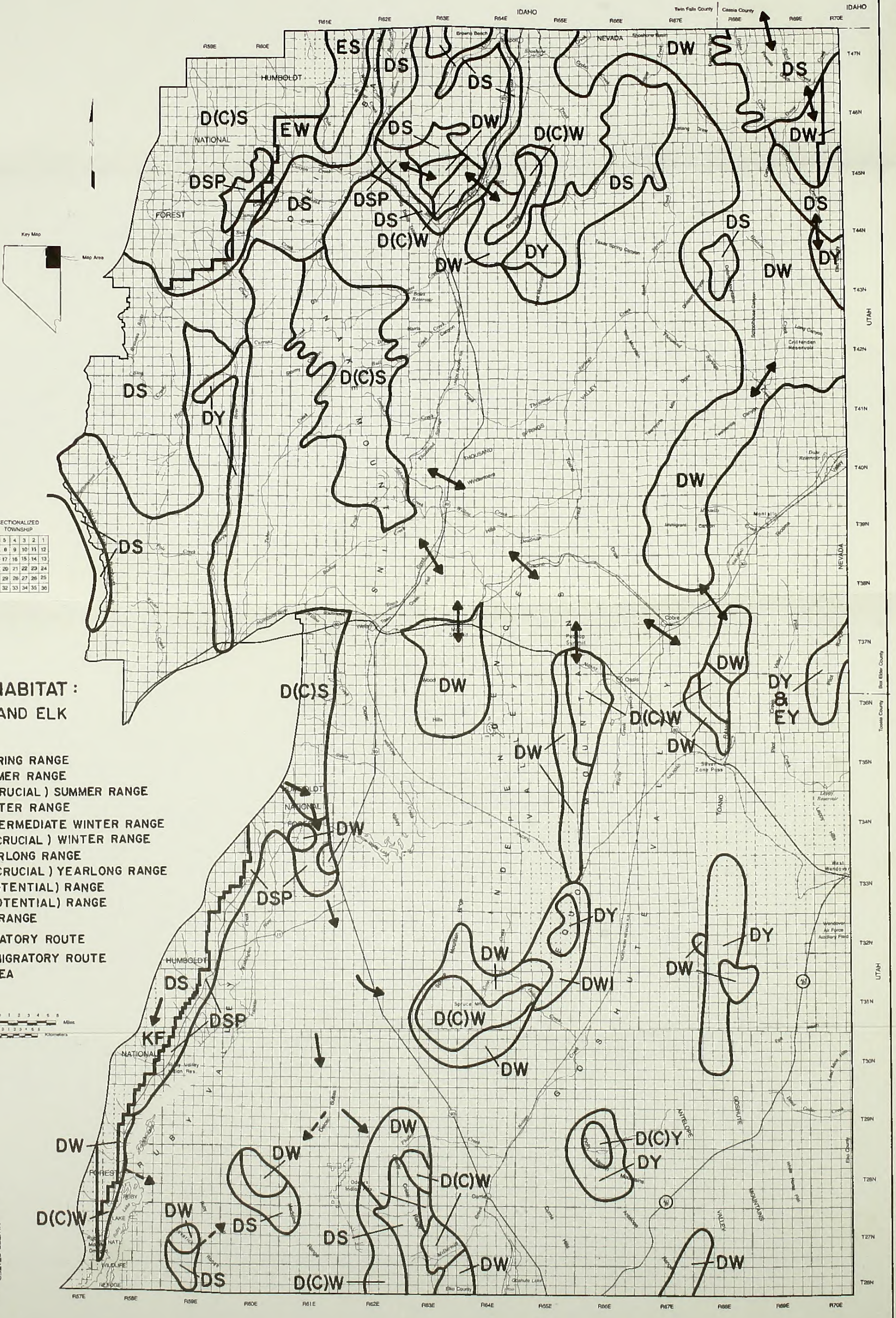

BIG GAME HABITAT:
MULE DEER AND ELK

DSP - MULE DEER SPRING RANGE
DS - MULE DEER SUMMER RANGE
D(C)S - MULE DEER (CRUCIAL) SUMMER RANGE
DW - MULE DEER WINTER RANGE
DWI - MULE DEER INTERMEDIATE WINTER RANGE
D(C)W - MULE DEER (CRUCIAL) WINTER RANGE
DY - MULE DEER YEARLONG RANGE
D(C)Y - MULE DEER (CRUCIAL) YEARLONG RANGE
ES - ELK SUMMER (POTENTIAL) RANGE
EW - ELK WINTER (POTENTIAL) RANGE
EY - ELK YEARLONG RANGE
⟷ - PRIMARY MIGRATORY ROUTE
⟶ - SECONDARY MIGRATORY ROUTE
KF - KEY FAWNING AREA

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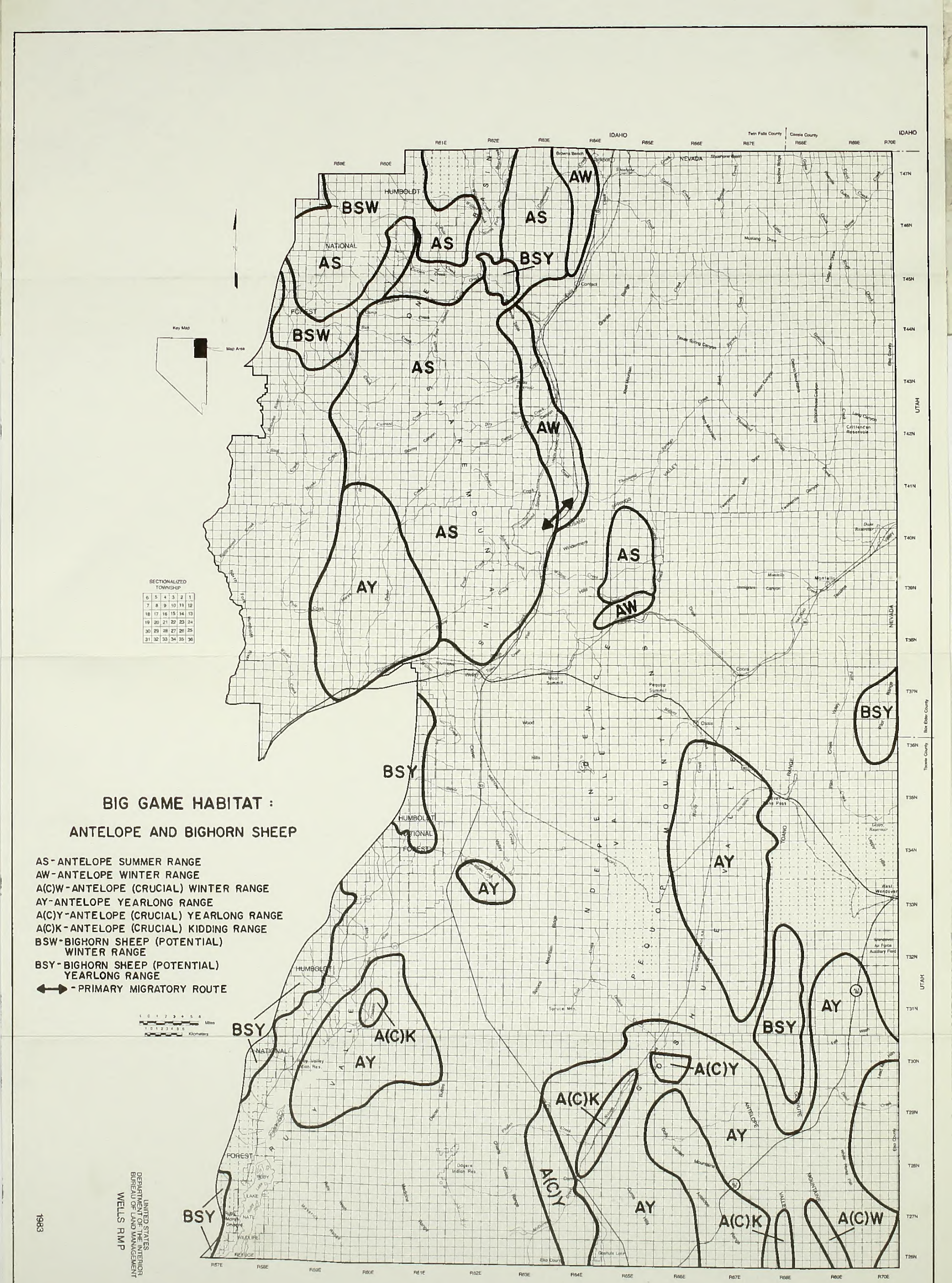
IDAHO
NEVADA
UTAH
HUMBOLDT NATIONAL FOREST
BSW
AS
AW
BSY
AY
A(C)K
A(C)Y
A(C)W
Key Map
Map Area
SECTIONALIZED TOWNSHIP
BIG GAME HABITAT :
ANTELOPE AND BIGHORN SHEEP
AS - ANTELOPE SUMMER RANGE
AW - ANTELOPE WINTER RANGE
A(C)W - ANTELOPE (CRUCIAL) WINTER RANGE
AY - ANTELOPE YEARLONG RANGE
A(C)Y - ANTELOPE (CRUCIAL) YEARLONG RANGE
A(C)K - ANTELOPE (CRUCIAL) KIDDING RANGE
BSW - BIGHORN SHEEP (POTENTIAL) WINTER RANGE
BSY - BIGHORN SHEEP (POTENTIAL) YEARLONG RANGE
- PRIMARY MIGRATORY ROUTE
Miles
Kilometers
UNITED STATES
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VALUABLE STREAMSIDE RIPARIAN HABITAT AND CONDITION
(Both public and private)

HABITAT CONDITION CLASSES

E - EXCELLENT
G - GOOD
F - FAIR
P - POOR

Condition classes shown are overall riparian habitat averages. Isolated sections of riparian habitat may be in better or worse condition than average.

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Key Map

Map Area

Miles

Kilometers

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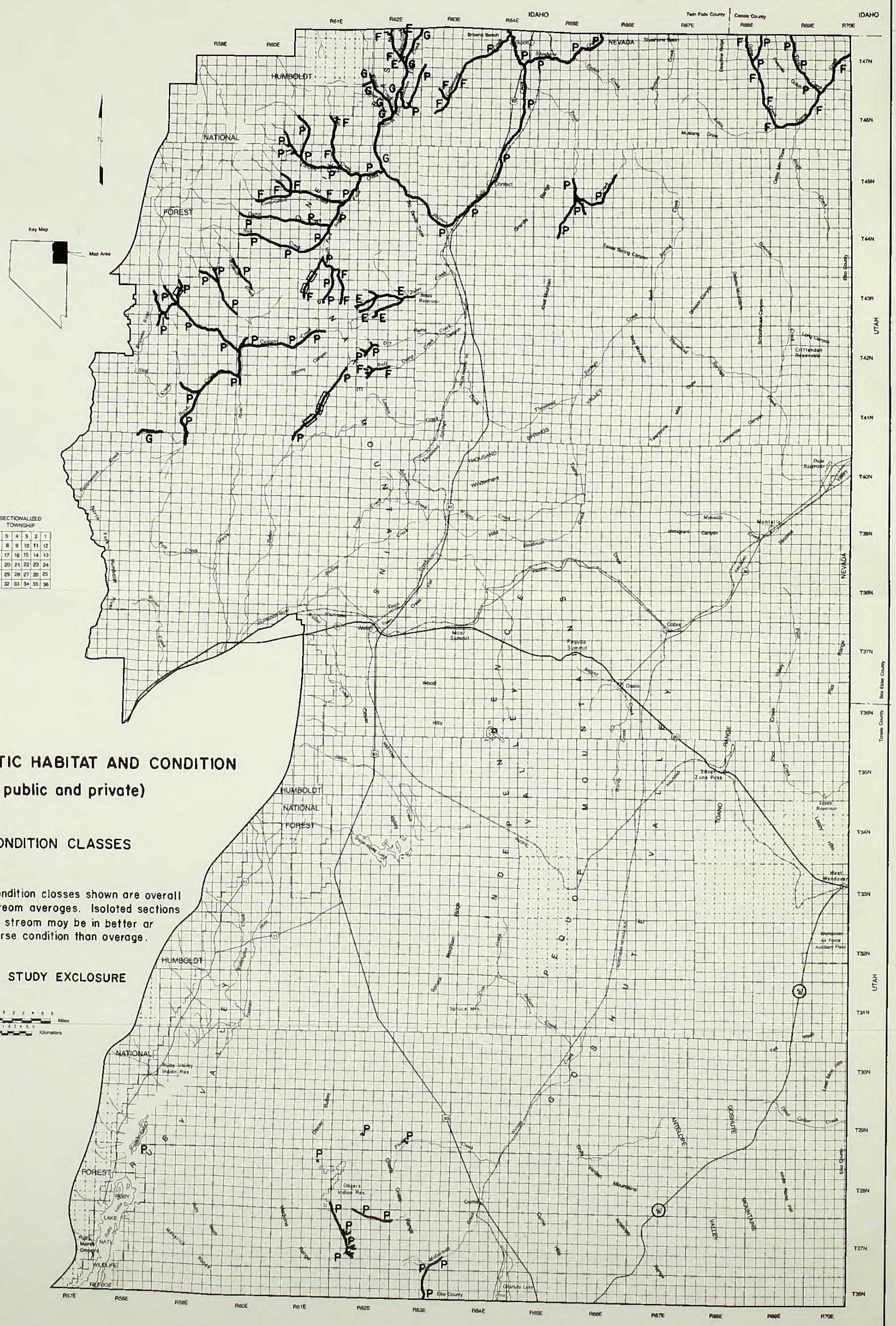
IDAHO
NEVADA
UTAH
HUMBOLDT
NATIONAL
FOREST
Key Map
Map Area
SECTIONALIZED TOWNSHIP
VALUABLE AQUATIC HABITAT AND CONDITION
(Both public and private)
HABITAT CONDITION CLASSES
E - EXCELLENT
G - GOOD
F - FAIR
P - POOR
Condition classes shown are overall stream averages. Isolated sections of stream may be in better or worse condition than average.
EXISTING FISHERY STUDY EXCLOSURE
Miles
Kilometers
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CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter presents the scientific and analytic basis for the comparison of alternatives set forth in Chapter 2. These discussions of the environmental consequences focus on impacts which are considered significant. The approach followed throughout the chapter is to describe briefly the full range of impacts which would occur by issue (as described in Chapter 1), providing detailed discussion of those which are considered significant. Exceptions were made to this general rule, however, when a question of potentially significant impact was raised as an issue in the scoping process, in contacts with interested agencies or persons, in the impact analysis process, or in a preliminary review. These exceptions, impacts to minerals, economics, and social values are evaluated after the ten other issues. Assumptions and criteria (thresholds) used to establish significance are described later in this chapter.

Knowledge of the area and professional judgment, based on observation and analysis of conditions and responses in similar areas, have been used to infer environmental impacts where data is limited. Limitations on impact assessment occur where lack of available long-term data and detailed scientific data preclude an extensive analysis.

The RMP is designed to be a comprehensive, long range plan under which additional site specific analysis, planning, environmental analysis, project design and specific decision making will take place before actions occur. For example, wilderness designation is subject to congressional approval, powerlines must be applied for and are subject to an approval process, and competitive off-road vehicle events must have a permit. As a result, most impacts on resources and uses must be considered as potential risks and their significance judged accordingly. The management actions will be analyzed as to their short and long-term impacts to the environment.

The analysis which follows is thus designed to provide an overview of the direct and cumulative impacts of the alternatives to each resource conflict area (RCA) and the resource area as a whole. The analysis addresses the impacts (both short and long-term) associated with particular management actions and then compares the relative magnitude of the impacts that would result from the implementation of each alternative. Environmental analysis will be performed for all projects prior to approval.

This chapter will also include where appropriate, the relationship between short-term use of the environment and maintenance and enhancement of long-term productivity, and irreversible or irretrievable commitment of resources. Actions committing future generations to continue a similar course are considered irreversible. Irretrievable is defined as not replaceable. The standard operating procedures in Chapter 2 incorporate what are normally considered to be mitigating measures. Therefore, all adverse impacts can be considered as unavoidable.

Impacts to air quality and ground water are not

considered to be significant and will not be discussed further. Impacts to threatened and endangered plant species and cultural resources are difficult to determine, given a lack of site-specific project information. As these resources are protected by standard operating procedures and laws and will be examined in future environmental assessments, they are not analyzed further.

If lands are suitable, agricultural development will be allowed, including disposals under the Desert Land Act to a level equal to water availability as determined by the State of Nevada Division of Water Resources. In general, this development would be limited to lands in the R/M or D areas (excluding community expansion lands) as shown on Map 2-7. The resource values foregone would probably be outweighed by the economic benefits of agricultural development. Excluding impacts to the water resource, which is managed by the State of Nevada, agricultural development would cause only site specific impacts which would be evaluated in environmental analyses prepared prior to development approval. Therefore, agricultural disposals will not be analyzed further.

Bureau policy states that rivers on the National Park Service list with potential for inclusion into the National Wild and Scenic rivers System are to be evaluated and that recommendations pertaining to further study should be part of the Bureau planning process. About 25 miles of the Mary's River are on this list and were analyzed by the Elko BLM and the Humboldt National Forest in a report titled Mary's River - Wild and Scenic River Evaluation dated December 1982. This report determined that implementation of the Mary's River Habitat Management Plan involving stream rehabilitation and the presence of 14 of the 25 river miles within the Jarbidge Wilderness Area would provide more protection and enhancement of the stream and its environs than would further study for inclusion into the National Wild and Scenic River System. Therefore, further study of the river would not have a significant beneficial or adverse impact and will not be analyzed further.

ASSUMPTIONS FOR ANALYSIS

In order to analyze the impacts from the management actions of each alternative it was necessary to make some assumptions. These are listed below to aid the reader in reviewing the impacts.

General Assumptions

1. BLM will have the funding and work force to implement and supervise the selected alternative.

2. Implementation of the RMP would begin in 1984, with short-term actions being completed within 7 years and long-term actions over a 20 year period.

3. Short-term impacts occur within 7 years and long-term impacts occur from 7 to 20 years. all impacts are long-term unless otherwise stated.

4. Impacts are direct unless otherwise noted as being indirect or cumulative.

5. Impacts will be monitored and management adjusted as necessary, based on new data from evaluation and monitoring procedures.

6. A worst case analysis is used in analyzing impacts to access and other issues where information essential for analyzing those impacts is not available.

7. Baseline data for vegetation condition and trend, habitat condition, and other parameters is the best available. While this data is not adequate by itself for making forage allocation decisions, it is adequate for planning and analysis purposes. Data was extrapolated when necessary to cover areas for which no data was available.

8. The Standard Operating Procedures set forth in Chapter 2 will be used in implementing the RMP. Impacts which would be mitigated through these procedures will not be discussed.

9. Environmental analyses (including categorical exclusions) will be conducted prior to implementing any activity level plans.

Assumptions for Specific Issues

ISSUE 1: LANDS

1. The desire to convert public lands to private ownership will continue to increase due to continuing urban expansion needs and renewed

emphasis on land sales.

2. Private land owners will continue to desire consolidation of their lands primarily through land exchange.

ISSUE 2: CORRIDORS

1. Demand for utility and transportation rights-of-way will increase and be met as the Thousand Springs and White Pine power projects are completed and as electrical power demands for community expansion and agricultural development require more transmission lines.

ISSUE 3: ACCESS

1. Public access easements will be obtained on those roads identified.

2. Public access will be lost on any roads for which public access easement is not acquired.

ISSUE 4: RECREATION

1. Current trends and methods of recreation use will continue in the future unless otherwise stated.

2. Any increase or decrease in hunter days is proportional to increases or decreases in mule deer population as stated by NDOW.

3. All of the 175,951 WSA acres will be designated as open to ORV use until wilderness designations, if any, are enacted by Congress. At that time, the ORV designation will be changed to closed.

ISSUE 5: WILDERNESS

1. Lands recommended as preliminarily suitable for wilderness preservation will undergo a U.S. Geological Survey/Bureau of Mines (USGS/BM) mineral survey, the results of which will be received before a final recommendation concerning wilderness suitability is forwarded to the President. We assume that all lands recommended as suitable for wilderness preservation will be so designated by Congress.

2. Lands designated as wilderness by Congress will be segregated from mineral entry except for valid rights existing at the time of designation.

3. Lands recommended as nonsuitable for wilderness preservation will eventually be released from wilderness review.

4. Impact conclusions are based on reasonable probabilities and do not necessarily represent a worst case situation.

ISSUE 6: LIVESTOCK GRAZING

1. Grazing use levels will be based on completed monitoring information including utilization studies and actual use data. Livestock operators will have up to five years to adjust their stocking rate to carrying capacity. Adjustments will be based primarily on data from the monitoring program in coordination and consultation with the livestock operator and on a case by case basis with other interested groups.

2. All livestock grazing will be during the proper season of use in order to meet the physiological needs of key vegetative species.

ISSUE 7: WILD HORSES

During hot dry weather, wild horses concentrating near water will cause damage to vegetation and compete with other animals for water. Traveling long distances for water affects the condition of wild horses and causes stress on colts.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. Reasonable numbers of wildlife as determined by the NDOW includes random use by wildlife of both public and intermingled private lands.

2. Because the 1979-1982 Terrestrial Wildlife Inventory for the Wells RA was not conducted by allotment or by RCA and the enormous time needed to obtain number, type, condition, and acreage of all the terrestrial riparian habitat, professional judgement was used to develop representative percentages of habitat for each RCA. The following percentages of terrestrial riparian habitat will be used to analyze the impacts to terrestrial riparian habitat within each RCA:

RCA	% of Terrestrial Riparian Habitat
Cherry Creek	8
Spruce/Goshutes	7
Mary's River	22
O'Neil/Salmon Falls	35
Goose Creek	14
Pilot/Crittenden	6
Metropolis	4
Ruby/Wood Hills	4
TOTAL	100

ISSUE 9: RIPARIAN/STREAM HABITAT

1. Riparian/stream habitat not proposed for improvement will continue to decline at present rates. Projecting these rates into the future, the following assumptions were made:

a. In the short-term, 60 percent of the existing habitat in a fair or better condition class will decline to the next lower condition class.

b. In the long-term, 80 percent of the existing habitat in a good or excellent condition class will be lowered two condition classes and an additional 10 percent will decline one condition class.

c. With implementation of an improvement program, an overall good condition class will be achieved over the long-term on those areas improved and 70 percent of these areas will improve one condition class in the short-term.

ISSUE 10: WOODLAND PRODUCTS

1. The demand for woodland products, particularly fuelwood, will increase due to rising costs of home heating.

Other Assumptions

1. The GEM Assessment, field data, and the Wells MRI are the best available information on the existence and/or potential of energy and mineral resources in the Wells RA.

2. In order to analyze impacts on minerals because of time of year restrictions to protect terrestrial wildlife habitat, it was necessary to assume that the entire area would be totally closed to all mineral exploration activities. Weather conditions and the exact location may allow minor modification thereby allowing for some activities.

3. The Computerized Ranch Budget analysis (see Appendix 5) prepared by the Economics, Statistics,and Cooperatives Service is an accurate portrayal of the Wells RA livestock operations.

4. The social analysis interviews conducted in the summer of 1981 represent current views held by some users of BLM administered lands.

DETERMINATION OF SIGNIFICANT IMPACTS

The purpose of this section is to define the threshold used in each resource to identify significant impacts. Environmental impacts can be either beneficial or adverse, depending on how they impact the resource in question. In some disciplines, existing condition is the baseline that separates beneficial from adverse impacts and maintaining the current situation results in no significant impacts. The following thresholds have been developed to measure the significance of impacts.

ISSUE 1: LANDS

1. Offering public lands for sale in amounts which exceed current and future demand is a significant adverse impact to land values.

ISSUE 2: CORRIDORS

1. The designation or identification of any transportation and utility corridor is a significant beneficial impact for potential corridor users.

2. No designation or identification of any transportation and utility corridor is a significant adverse impact for potential corridor users.

ISSUE 3: ACCESS

1. The acquisition or loss of access on any road identified as important by BLM or other agencies for public access or administration of agency programs is a significant impact.

ISSUE 4: RECREATION

1. Any action which improves or degrades the quality of the recreation experience, including visual quality, over that provided by the existing situation is a significant impact.

2. Any action which increases or decreases visitor days at a particular recreation site or hunter days in the resource area by more than 10 percent is a significant impact.

3. Any restriction or limitation to ORV use on 10 percent or more of the lands within an RCA or the resource area is a significant adverse impact.

ISSUE 5: WILDERNESS

1. Any action which preserves, enhances, degrades, or causes the loss of wilderness characteristics in one or more WSAs is a significant impact.

ISSUE 6: LIVESTOCK GRAZING

1. The threshold of significance for livestock grazing is a 10 percent or greater change over existing levels (three to five year average licensed use) for both individual RCAs and the overall resource area. This is based on the Department of Interior Appropriation Act for 1982 which set 10 percent as a limit for appealed reductions.

2. The threshold for the vegetation resource is change in ecological range condition by one condition class on 10 percent or more of either an individual RCA or the entire Wells RA.

3. The private acquisition, through BLM's disposal, of public land under grazing permit to someone other than the permittee is a significant adverse impact to that operator.

ISSUE 7: WILD HORSES

1. Any impediment to free movement within wild horse herd areas is a significant adverse impact.

2. Reducing or maintaining a herd population below 50 animals is a significant adverse impact. This is the level at which age structure and sex ratio factors would make herd viability difficult to maintain.

3. Any increase above present levels in wild horse numbers in any or all of the six herd areas that is within available forage and water supplies is a significant beneficial impact.

4. Any increase in water supplies within a wild horse herd area is a significant beneficial impact to wild horses, all species of animals, and vegetation in that area.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. Any action which would impair or improve the suitability of identified or historic habitat for the reintroduction of native species, including, but not limited to, peregrine falcons (federally listed endangered species) or bighorn sheep (state listed sensitive species) is a significant impact.

2. Any change in one condition class for terrestrial (as opposed to streamside) riparian habitat occurring on 15 percent of the existing habitat acreage of an RCA or the resource area is a significant impact.

3. Any change in one condition class occurring over ten percent of the useable habitat on any big game noncrucial habitat or any change occurring over five percent of the useable habitat on any big game crucial/key habitat in any RCA or overall resource area is a significant impact.

4. Any action which results in 50 percent or more of the known condition of big game habitat in RCA or the resource area being in a fair or better condition is a significant beneficial impact.

5. Any action which results in 50 percent or more of known condition of big game habitat in a RCA or the resource area being in poor condition is a significant adverse impact.

6. Any action which would preclude big game numbers from reaching reasonable numbers, as defined by the NDOW, over the long-term is a significant adverse impact.

7. Any action which would correct habitat conflicts or hazards on 25 percent of the springs and wet meadows, 50 percent of the fences within crucial big game habitat, and 25 percent of the fencing within noncrucial big game habitat is a significant beneficial impact. No corrective action taken is a significant adverse impact.

ISSUE 9: RIPARIAN/STREAM HABITAT

1. The threshold for riparian/stream habitat is good or better condition. Anything less than good condition does not meet regulations; however, a positive trend such as improving habitat in poor condition to fair is a beneficial impact which does not meet the threshold. BLM is directed to be in compliance with Floodplain Management and Protection of Wetlands as specified in Executive Orders 11988, 11990, and Bureau Manaul 6740, which specifies the above threshold.

ISSUE 10: WOODLAND PRODUCTS

1. A change of 10 percent or more in the amount of the annual woodland products harvest is the threshold.

2. Providing intensive management of woodland products on a sustained yield basis is a significant beneficial impact.

Other Thresholds

1. Mineral development would be highly restricted or prohibited in designated wilderness areas. A significant adverse impact will occur if more than one percent of the lands within an RCA or the Wells RA having good or high mineral potential were segregated from mineral entry.

2. If oil and gas or geothermal lease development is subject to time of year restrictions on more than 15 percent of the lands in either an individual RCA or the entire resource area, a significant adverse impact will occur.

3. The threshold for net ranch income and gross sales is a five percent change for any ranch size group.

4. The threshold for expenditures, income, or employment is a five percent change in any sector.

5. The threshold for social significance is any change from the existing situation.

The remaining pages in this chapter analyze the environmental consequences of the five alternatives. Impacts on each of the ten resource issues plus effects on mining, the economy, and social values will be analyzed. Under each issue there will be one or more impact statement (underlined sentence) which describes the general impact of that alternative on the affected resource. Further clarification of that impact is provided in paragraphs that follow the impact statement.

NO ACTION

ALTERNATIVE

ISSUE 1: LANDS

1. Land values would not decrease.

Because public lands would be sold in response to demand on a case-by-case basis there would be no flooding of the market. Therefore, land values would remain static in both the short and long-term and no adverse impacts would result.

ISSUE 2: CORRIDORS

1. Utility and transportation companies would not benefit from long range planning.

Since no transportation and utility cooridors would be designated or identified, assured accurate long range planning by utility and transportation companies would be virtually impossible. This would be a significant adverse impact to these companies in both the short and long-term.

2. Resource values would be protected.

Since no utility and transportation corridors would be designated or identified, resource values such as visual quality, recreation values, and wildlife habitat would be mitigated on a case-by-case basis when applications for projects were received. As no limitations on corridor widths would be in effect, routes could be moved around sensitive areas. This is considered a significant beneficial impact to these resources in both the short and long-term.

ISSUE 3: ACCESS

1. Public access easement through important access routes would be acquired.

This alternative would not identify any resource priorities for acquiring access. Therefore, easement acquisition would be a significant beneficial impact to the affected resource in the short and long-term. These benefits would be of very low magnitude because public access easements would be initiated on a case-by-case basis as major difficulties arise.

2. Public access through important access routes would be lost.

Since this alternative would not identify any resource priorities for acquiring access, access through about 35 important access routes could be lost. This is considered a significant adverse impact to the affected resources over both the short and long-term.

ISSUE 4: RECREATION

1. Recreation opportunities available would be enhanced or degraded.

The quality of the camping experience is expected to be reduced at Ruby Marsh Campground while camping and picnicking would be degraded at Tabor Creek Recreation Area. Visitors at Ruby Marsh Campground would have less than properly maintained facilities and fewer visitor services than desired. More roads would occur without ORV designations and enforcement. Tabor Creek would experience increased soil compaction, vegetative loss, a higher number of fire rings, and loss of wildlife habitat. These are significant adverse short and long-term impacts.

Visitation at Ruby Marsh Campground would increase from 11,300 visitor days or 270,000 visitor hours per year currently to about 15,300

visitor days or 367,000 visitor hours in the year 2004. Tabor Creek visitation would increase from 900 visitor days or 16,000 visitor hours per year now to 1,300 visitor days or 22,000 visitor hours in the same period. These are significant beneficial long-term impacts.

The quality of the floatboating experience on Salmon Falls Creek would degrade as human waste and litter from recreationists increases along the stream. Annual visitation is expected to increase from the current 100 visitor days to about 200 in the year 2004. The degraded quality is a significant short and long-term adverse impact whereas the increased recreation use is a significant beneficial long- term impact.

No attempt would be made to bring Crittenden Reservior into BLM ownership. Resource problems such as litter, uncontrolled camping and a lack of sanitation facilities would continue to degrade the quality of the recreational experience in both the short and long-terms. Trampling and erosion of soil and vegetation by livestock and vehicles would continue to occur, reducing the quality of the fishery over time. Annual visitation would remain near the current 3,200 angler days (10 year average) reported by NDOW or would slightly decrease. The degraded quality is a significant short and long-term adverse impact whereas the change in use is not significant.

The quality of the camping and fishing experience along Mary's River (on public land in the vicinity of the Orange Bridge) would degrade the short and long-term as litter and resource damage increases along the stream. This is a significant short and long-term adverse impact.

Opportunities for hunting, fishing, and wildlife observation would continue to decline resource area wide as aquatic, riparian, and big game habitats continue to degrade. Hunter days for mule deer would decrease by about 10 percent from 11,725 to 10,553 over the long-term. The degraded quality of these activities and the reduced hunting use are both significant long- term adverse impacts.

Visitor use estimates and projected changes for this and the other alternatives were based on fee collection reports, traffic counter information, and professional judgement.

2. ORV use would remain unhampered.

Since no ORV designations would be made the entire resource area would remain open to ORV use. Therefore, no significant impact would occur over both the short and long-terms.

ISSUE 5: WILDERNESS

1. No preservation of wilderness character or the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would take place.

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	0	55,665
Goshute Peak	0	69,770
South Pequop	0	41,090
Bad Lands	0	9,426
TOTAL	0	175,951

2. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be lost on all of the 175,951 WSA acres.

Actions by man would, in the long-term, degrade the wilderness character of these WSAs by reducing their natural character and the opportunity to experience solitude, and/or primitive and unconfined recreation in a natural setting. Roads would be built to provide better access to mining claims, land leased for oil and gas use, and other reasons. Additional impacts would accrue as mineral extraction, mining disturbance, and/or exploration for oil and gas takes place. Loss of vegetation and increased soil erosion would occur in proportion to increased ORV use for recreation and other resource uses. More stock tanks, fences, seedings, and pipelines would also occur as range improvements are completed in these WSAs. Visual quality of these areas would also be lowered as corridors are identified and designated.

It is expected that naturalness would be lost on all but the most rugged and steep topographic portions of the WSAs. The acres of each WSA expected to retain or lose its naturalness over

the long-term are shown below.

Acres of Natural Character Over the Long-Term:

WSA	Retained	Lost
Bluebell	1,500	54,165
Goshute Peak	5,000	64,770
South Pequop	0	41,090
Bad Lands	873	8,553
TOTAL	7,373	168,578

Outstanding opportunities for solitude or primitive and unconfined recreation would be lacking in the three small areas with natural character. Therefore, a significant adverse long-term impact would occur from the eventual loss of wilderness character in the four WSAs.

The Wells RA Wilderness Technical Report (Bureau of Land Management 1983) provides detailed impact analysis for this and the other alternatives. Impact analyses for this and the other alternatives are based on information in the wilderness inventory files and professional judgement of many resource specialists in the Elko District including those involved with recreation, wilderness, minerals, range, wildlife, and cultural resources.

ISSUE 6: LIVESTOCK GRAZING

1. Present licensed use would not change.

This alternative proposes that livestock use would continue at the three to five year licensed use level. There is no available data to use to judge how potential future vegetation changes would affect livestock AUMs.

2. Range condition and trend would remain in their current state.

It is expected that range conditions would continue to decline in areas currently in downward trend. Areas with upward trend would continue to improve while areas of static trend would remain the same. Range trend would depend largely upon the individual users initiative to manage the vegetative resource.

3. Livestock management problems would occur as a result of land disposals.

Without a long range resource area wide plan, land disposals would be done on a case-by-case basis. If public land currently grazed under permit were acquired, through BLM's disposal, by someone other than the permittee, a significant adverse impact to that operator could result. These impacts would be both short or long term depending on the time of sale and are expected to be of lesser magnitude under this alternative than the others because fewer disposals would take place.

4. No added costs to livestock operators would occur because of wilderness designations.

Since no wilderness designations would occur, there would be no adverse impacts to livestock operators.

5. No loss of livestock grazing would occur during riparian improvement.

Improvement efforts would be minimal, therefore, there would be no loss of grazing during improvement.

ISSUE 7: WILD HORSES

1. Wild horse herd numbers would not change. The free roaming nature of wild horses would not be affected.

All wild horse herd populations would remain essentially unchanged. This would not be a significant adverse short or long-term impact.

Since fences currently are not a problem to horses and fence construction will not be a major component of this alternative there would be no significant impacts to the free roaming nature of wild horses in the short or long-term.

2. The condition of wild horses would not improve.

Since no additional water supplies would be provided, no improvement of wild horse condition would occur in the short or long-term.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. The opportunity for reintroduction of native wildlife species would be impaired while wintering bald eagle habitat would be maintained.

Current resource management does not provide for the protection or special management of these areas by any means other than the Habitat Management Plan (HMP) process. This alternative would not allow for a comprehensive action plan to maintain and enhance these resource values in a timely manner. Hence, the possible reintroduction of native species would be impaired in some areas.

Peregrine falcon habitat in the Spruce/Goshutes, Mary's River and Pilot/Crittenden RCA's would not be impacted by any proposed management actions. However, since no ACEC to protect their habitat is proposed neither the Bureau or other Federal or State agencies would make commitments towards the reintroduction of this species. Therefore, the lack of ACEC designation is a significant short and long term adverse impact to peregrine falcons. The significance of this impact is further emphasized by the fact that the sites in the Spruce/Goshutes and Mary's River RCAs constitute two of the five known eyries within the state.

This alternative also would not designate any wilderness areas. Therefore, both the Bureau and the NDOW would be reluctant to provide habitat improvement for or release bighorn sheep into the Bad lands, Bluebell, or Goshute Peak WSAs. Probably the single largest conflict with reintroduction is the fact that within the Bluebell and Goshute Peak WSAs and the Pilot/Crittenden RCA the identified habitat is currently being grazed by domestic sheep. Problems associated with animal health may preclude reintroduction. Therefore, adverse impacts to bighorn sheep reintroduction are significant in both the short and long-terms.

Since native range condition is not expected to improve, the impacts to elk and sharp-tailed grouse reintroduction are significant short and long-term adverse impacts.

Current wintering bald eagle habitat would be maintained. Therefore, no impacts to bald eagles are expected.

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

Current demands may adversely impact riparian habitats such as meadow complexes, aspen stands, spring sources, and other habitats associated with surface or subsurface water sources. These areas are particularly important to sage grouse populations. For any given number of acres, the riparian habitat type supports higher population diversity and densitities than any other type. (Thomas, Maser and Rodiek 1979).

Therefore, from results of the 1979-1982 terrestrial wildlife inventory it is anticipated that all of the terrestrial riparian habitat in current poor condition would remain there and about 50 percent of those habitats in excellent, good, or fair condition would decline one condition class in all RCAs and the resource area as a whole. The latter would be a significant short-term adverse impacts. The other 50 percent of these acres would remain in their current condition because of their physical location which limits livestock impacts.

3. Big game habitat would generally be maintained in its current condition class or decline from fair or better to the next lower condition class.

Current land use patterns and conflicts would remain and lead to a further decline in resource condition. Livestock grazing represents the single largest competitive use to wildlife and wildife habitat (Gallizioli 1977). The current condition of wildlife habitat and its apparent trend indicates that damage of high priority habitat would continue to the point where it would result in the majority of habitat being classified in poor condition or the complete loss of some habitats. Continued loss of habitat would significantly reduce the productivity of existing habitat to the point where it would become only marginally adequate for wildlife, especially those dependent upon riparian habitat.

Since there would not be any significant changes in overall native range condition it is antici-

pated that the majority of big game habitat currently in poor condition would not improve. This would in turn result in reasonable numbers not being met in the short or long-term. This continued loss of habitat would reduce population levels of big game.

The projected long-term trend of known condition (in acres) of crucial and noncrucial big game (deer and antelope) habitats are shown below by RCA.

Projected Crucial Wildlife Habitat Condition

RCA	Good	Fair	Poor
Cherry Creek	8,700	17,400	62,400
Spruce/Goshutes	0	32,400	63,000
Mary's River		Unknown	
O'Neil/Salmon Falls	15,550	15,500	40,800
Goose Creek	0	0	0
Pilot/Crittenden	0	0	0
Metropolis		Unknown	
Ruby/Wood Hills	0	0	27,900
TOTAL	24,200	65,300	194,100

Projected Noncrucial Wildlife Habitat Condition

RCA	Good	Fair	Poor
Cherry Creek	13,700	34,700	79,300
Spruce/Goshutes	3,450	81,900	767,750
Mary's River	0	74,400	74,400
O'Neil/Salmon Falls	11,750	23,400	46,550
Goose Creek	0	31,050	109,250
Pilot/Crittenden	6,750	6,750	0
Metropolis	0	0	24,900
Ruby/Wood Hills	0	0	82,800
TOTAL	35,650	252,200	1,184,950

All of the habitat currently in poor condition would remain there, about 50 percent of those habitats in good or fair condition would decline a condition class, and in all RCAs, except Pilot/Crittenden, and the resource area as a whole, at least 50 percent of the known habitat condition would be in poor condition. These are not expected to result in reasonable numbers, and significant long-term adverse impacts would occur. It should also be pointed out that of those acres which would remain in their current condition class, their condition could improve, decline, or remain static within that class.

4. Identified wildlife hazards or habitat conflicts would not be corrected.

Under this alternative only major hazards and conflicts would be addressed and only in those areas where it would be possible without significant expenditures. This is an insignificant short and long-term beneficial impact.

ISSUE 9: RIPARIAN/STREAM HABITAT

1. Little stream/riparian habitat would be maintained in a good or better condition class.

Currently about 12 percent or 54 miles of stream/riparian is in good or better condition. Of this about five to ten miles are in areas where natural barriers block access of livestock. These areas would be maintained in a good condition class except where upstream watersheds are damaged to a state where significant sediments become deposited. This would be a significant short and long-term beneficial impact to these isolated areas. However, these areas comprise about two percent of the total stream/riparian resource and are, therefore, considered relatively insignificant to the overall riparian resource.

On a case-by-case basis some stream/riparian habitat improvement would occur. Such improvement would be minimal and significant short and long-term beneficial impacts would occur to these specific sites.

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

Of the 54 miles of stream/riparian in good or better condition about 45 miles would continue to decline to a less than good condition. This is a significant long-term adverse impact.

Currently 87 percent or about 396 miles of stream are in a deteriorated state, less than good condition. Primarily as a result of livestock grazing, but also accelerated by mining, land disposals, wild horses (Cherry Creek RCA only), and road construction, the on-going decline of aquatic riparian habitat condition would continue. Under this alternative all but five to ten of the 457 miles of stream and its associated

riparian habitat would continue to decline in overall habitat condition in the long term. The projected short and long term significant adverse impacts of this alternative are displayed by RCA in Tables 4-1 and 4-2.

TABLE 4-1

STREAMSIDE RIPARIAN HABITAT CONDITION IN ACRES BY RCA

NO ACTION ALTERNATIVE

Five years from present
(20 years from present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		10.2 (2.6)	15.4 (2.6)	135.5 (155.9)		161.1
Spruce/Goshutes	12.8 (3.2)	19.2 (3.2)	(25.6)			32.0
Mary's River		120.3 (30.1)	439.1 (94.6)	1554.8 (1989.5)		2114.2
O'Neil/Salmon Falls	115.2 (28.8)	407.1 (87.3)	809.2 (403.3)	7540.9 (8353.0)	Approx. 30	8902.4
Goose Creek				108.8 (108.8)		108.8
Pilot/Crittenden						
Metropolis			7.7 (1.9)	94.7 (100.5)		102.4
Ruby/Wood Hills						
TOTAL ACRES	128.0 (32.0)	556.8 (123.2)	1271.4 (528.0)	9434.7 (10707.7)	Approx. 30	11420.9

Source: Values in this table were derived from basic data shown in Chapter 3.

TABLE 4-2

AQUATIC HABITAT CONDITION IN MILES BY RCA

NO ACTION ALTERNATIVE

Five years from present
(20 years from present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek				21.7 (21.7)		21.7
Spruce/Goshutes	0.8 (0.2)	1.3 (0.2)	(1.7)			2.1
Mary's River		2.8 (0.7)	4.2 (0.7)	115.5 (121.1)		122.5
O'Neil/Salmon Falls	8.7 (2.2)	22.2 (4.6)	39.5 (26.2)	178.9 (216.3)	Approx. 5	254.3
Goose Creek			11.0 (2.7)	34.7 (43.0)		45.7
Pilot/Crittenden						
Metropolis			1.2 (0.3)	9.7 (10.6)		10.9
Ruby/Wood Hills						
TOTAL MILES	9.5 (2.4)	26.3 (5.5)	55.9 (31.6)	360.5 (412.7)	Approx. 5	457.2

Source: Values in this table were derived from base data shown in Chapter 3.

ISSUE 10: WOODLAND PRODUCTS

1. Woodland product harvest levels would remain static or decrease over time.

It is expected that woodland product harvest would not change in the short-term and that harvest levels would decrease by more than ten percent over the long-term. The latter is a long term significant adverse impact. The reason for this decrease in harvest levels is that over time deadwood and Christmas trees would become limited and no additional greenwood or Christmas tree cutting areas would be made available to meet increased demand.

The WSAs would not be recommended as suitable for wilderness designation. With Congressional release of the Bluebell, Goshute Peak, and South Pequop WSAs the following listing displays the number of Christmas tres that could potentially be cut on a sustained yield basis by commercial and private interests in these areas.

WSA	Christmas Trees
Bluebell	600
Goshute Peak	600
South Pequop	400
TOTAL	1600

These trees could increase the yearly commercial harvest by approximately 50 percent in the resource area except for the fact that under this alternative, expansion of commercial sale areas would not be expected. Private harvest of trees is expected to increase, but by less than ten percent.

2. No intensive management of woodland products would occur.

Under the existing situation there has been little specific management directed toward woodland products in the Wells RA beyond providing permits to the public. There has not been the intense management needed to adequately manage and protect the woodland resources. This is leading to resource deterioration and declining stand condition in many of the most accessible areas. Without proper woodland management, full harvest levels under the sustained yield principle would not be met. Unauthorized use by woodcutters would become more frequent without enough legal cutting areas to meet demand. Unauthorized woodcutting may also lead to traditional access routes across private properties being closed. These short and long term significant adverse impacts would be expected to continue under this alternative.

Without consolidating the higher elevation checkerboard lands, woodland products in these areas would continue to be very difficult to manage. Uneven management, unauthorized use, and access problems would continue to prevail in the checkerboard lands. By not acquiring access rights, harvesting in areas that are landlocked would be impossible. This would continue to pose management problems.

IMPACTS ON MINERALS

1. Mineral development would not be adversely impacted because of wilderness designation.

None of the four WSAs would be recommended as suitable for wilderness designation. Therefore, no mineral entry segregations would be enacted in the Spruce/Goshutes or O'Neil/Salmon Falls RCAs and no impacts would occur in the short and long-terms.

2. Mineral development would be limited because of time of year restrictions to protect terrestrial wildife habitat.

Existing time of year restrictions would continue on the acres and percentages of RCAs listed below to protect sage grouse strutting and nesting habitats.

RCA	Acres	% of RCA
O'Neil/Salmon Falls	170,800	25
Goose Creek	42,200	20
Ruby/Wood Hills	56,300	17

These restrictions would slow oil/gas and geothermal exploration and/or development in the short and long-term and are significant adverse impacts in these RCAs. Time of year restrictions to protect sage grouse and other species are not significant in the other five RCAs and the Wells RA as a whole.

3. No adverse impact would occur from segregation of the Ruby Marsh Campground.

Since no mineral withdrawl of the campgound is recommended, no adverse impacts to minerals would occur.

ECONOMIC IMPACTS

Recreation and Wildlife

Decreased wildlife populations in the long-term would result in fewer hunter days and a reduction in expenditures, income and employment. There would also be a decrease in the number of fisherman days, and associated expenditures. Other recreational activities such as camping, picnicking, and floatboating would increase as a result of population increases expected in the resource area.

The long-term decrease in expenditures associated with these visitor changes would be about $184,700 per year. The change would cause a total decrease of personal income to Elko County of approximately $54,600 per year.

In the short-term there would be a negligible decrease in employment. However, in the long-term, the decrease in direct and indirect employment would be about 8 persons.

These impacts to expenditures, income, and employment would be significant long-term adverse impacts as they represent a decrease of about ten percent to the recreation sector.

Wilderness

The following listing shows the long term annual visitor days and associated benefits of the four WSAs.

WSA	Visitor Days	Visitor Day Benefits
Bluebell	600	$ 6,000
Goshute Peak	1500	$15,000
South Pequop	300	$ 3,000
Bad Lands	1000	$10,000
TOTAL	3400	$34,000

These benefits represent an annual increase of $16,500 over the current situation and are insignificant to the recreation sector.

Livestock Grazing

Since there would be no changes in livestock AUMs, range condition, or livestock management, there would be no impacts to the ranching economy.

Wild Horses

Since there would be no change in wild horse numbers, and, hence no change in the value of forage consumed yearly, there would be no impacts to the ranching economy compared to the current situation.

Woodland Products

The following listing compares the current market value of woodland products harvested with that of this alternative in the long term.

Market Value
(1980 Dollars)

Woodland Product	Existing Situation	No Action
Fuelwood	$ 47,400	$38,250
Posts	$ 20,600	$ 4,460
Christmas Trees	$181,440	$62,400
TOTAL	$249,440	$105,110

Construction Sector

Since there are no construction projects proposed there are no impacts to the construction sector.

IMPACTS ON SOCIAL VALUES

Lands

Ranchers within the checkerboard and the general public would not greet this alternative with enthusiasm. Both groups would desire more emphasis on consolidating the checkerboard areas to enhance livestock management and other purposes such as providing better access to recreational areas like the Ruby Mountains.

Corridors

This alternative would not be supported by the general public because most persons desire planning for future corridors so as to minimize disturbance of rights-of-way. This alternative would make future planning especially difficult for utility and transportation companies.

Access

The ranchers in the county would probably react in a neutral manner towards this alternative as it relates to access. Many feel that with less legal public access, their property is safer from trespass and vandalism.

Other persons would not favor this alternative as they are desirous of assured public access both now and in the future to public lands for fishing, hunting, hiking, mining, woodcutting and other activities.

Recreation

Recreation development would not be stressed in this alternative. From the interviews conducted it appears that the Elko County public is fairly neutral towards this alternative as it relates to recreation. About 90 percent of those interviewed did not express criticism of or have complaints about the resource area recreation program. In fact, 17 percent of the sample interviewed expressed concern that developed areas only attract more people and pollute the area. Persons outside Elko County both in and out of Nevada would not agree with this last statement as many of them are attracted to the Ruby Marshes and could not enjoy it fully if it were not for the Ruby Marsh Campground.

Wilderness

Wilderness areas within the Wells RA would not be endorsed by the majority of Elko County. This alternative would not recommend any wilderness areas and, thus, would be favored by the Elko County public and the mining industry.

National conservation organizations such as the Wilderness Society, Sierra Club, Friends of the Earth, and Audubon can be expected to strongly support wilderness preservation and would oppose this alternative. These groups generally have strongholds in larger metropolitan areas rather than rural communities.

Livestock Grazing

This alternative would be acceptable to ranchers and the majority of Elko County and Nevada over the Resource Protection Alternative which includes proposed AUM reductions. This alternative, however, would not be their first preference because no range improvements are proposed.

Wildlife and fisheries oriented publics and groups would favor this alternative over the Resource Production Alternative but not as much as the Resource Protection or Midrange Alternatives. These people would point to the small amount of red meat produced, on a national scale, in the Wells RA and claim the lands should be used to a larger degree for other uses pertaining to their recreation and/or wildlife values.

Wild Horses

The majority of Elko County ranchers and many Nevada residents would not favor this alternative as they view wild horses as competing with livestock and wildlife for forage. National organizations such as WHOA would favor this alternative over the Resource Production Alternative which would decrease wild horse numbers.

Terrestrial Wildlife Habitat

The majority of those interviewed would favor this alternative over Resource Protection or Midrange as it would continue to place emphasis on livestock grazing over improving habitat for terrestrial wildlife.

However, Nevada residents in general - many of whom hunt deer in Elko County - would desire more emphasis on improving wildlife habitat than in the past.

Sporstmen's groups, the NDOW and conservation groups also desire improvement of terrestrial wildife habitat and would support the Resource Protection Alternative over this alternative.

Riparian/Stream Habitat

Minimal riparian habitat improvement would be initiated under this alternative and the habitat condition would essentially remain the same. Due to the subtle changes in riparian condition, the majority of Elko county residents have not perceived and would not agree that the riparian habitat condition has been declining and, therefore, they would support this alternative.

Sportsmen's groups, the NDOW, conservation organizations, and professional biologists, would support the BLM's contention that the habitat is deteriorating and improvement must be accomplished or the habitat would eventually be lost. These persons and groups would strongly support the Resource Protection Alternative.

Woodland Products

This alternative presents a dichotomy to the public. It would make available for harvest the woodland products in the WSAs. However, no new cutting areas would be outlined for the public's use. Many Elko County residents and commercial cutters supplying Elko County, Salt Lake, and southern Idaho rely upon BLM woodland products for fuelwood and Christmas trees. Most persons would favor this alternative because of the availability of woodland products from the WSAs but they also would desire new cutting areas be made available as in the other alternatives.

Minerals

The mining community would favor this alternative as it would not recommend as suitable for designation any of the four WSAs. These areas would remain available for potential development. The Elko County populace believes strongly in few restraints by governmental agencies upon the free enterprise system. Therefore, the majority of Elko County would join the Nevada Mining Association and others in supporting this alternative.

A problem, however, with this alternative is that easements would be acquired only on a case-by-case basis, and could prove detrimental to mineral exploration if traditional access routes were closed or periodically disrupted by private interests.

OVERALL SUMMARY OF IMPACTS

The impacts of this alternative in the RCAs and the resource area are summarized in Table 4-3.

TABLE 4-3

IMPACTS OF THE NO ACTION ALTERNATIVE

ISSUE/Impact	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Coose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Land values would not decrease.	Since lands would be sold on a case-by-case basis there would be no flooding of the market (NS). ---------->								
CORRIDORS: Utility and transportation companies would not benefit.	Since no corridors would be designated or identified, long range planning by utility and transportation companies would be impossible (SA).				NA	Since no corridors would be designated or identified, long range planning by utility and transportation companies would be impossible (SA).			
Resource values would be protected.	Without corridor designation or identification, mitigation or relocation would protect resource values (SB).				NA	Without corridor designation or identification, mitigation or relocation would protect resource values (SB).			
ACCESS: Public access easements would be acquired.	NA	Public access easements would be acquired on a case-by-case basis as major difficulties arise. They would be of very small magnitude and would be beneficial to any affected resource (SB).							
Public access would be lost	NA	Public access through routes important for any of the resource issues could be lost. ---------->							
		11	4	10	2	3	4	1	35 Roads (SA)
		40	5	29	4	19	34	7	138 Miles (SA)
RECREATION: Recreation opportunities would be enhanced or degraded.	The quality of opportunities for hunting, fishing, and wildlife observation would decline (SA). Mule deer hunting would be reduced by about 10 percent (SA) while general recreation visitor day use would increase (SB).								
		Camping & picnicking degraded at Tabor Cr. (SA). Increase 400 visitor days (SB).	Floatboating degraded on Salmon Falls Cr. (SA). Increase 100 visitor days (SB).			Fishing degraded at Crittenden Reservoir (SA).		Camping degraded at Ruby Marsh Campground (SA). Increase 4000 visitor days (SB).	
		Camping & fishing degraded along Mary's River.							
ORV use would remain unhampered.	Since no ORV designations would be made the entire resource area would remain open to ORV use (NS) ---------->								
WILDERNESS: Wilderness preservation	NA	0 Areas, 0 Acres (SA)	NA	0 Areas, 0 Acres (SA)	NA	NA	NA	NA	0 Areas, 0 Acres (SA)
Loss of Wilderness character	NA	3 WSAs, 166,525 acres (SA)	NA	1 WSA, 9426 acres (SA)	NA	NA	NA	NA	4 WSAs, 175,951 Acres (SA)
LIVESTOCK GRAZING: Licensed use	Livestock use would continue at the three to five year licensed use level. There is no available data to use to judge how potential future vegetation changes would affect livestock AUMs (NS).								
Native range condition & trend	Native range condition and trend would remain at their current state. Range condition would continue to decline in areas with downward trend and improve in areas with upward trend (NS).								
Livestock management problems as result of land disposal.	The magnitude of land disposal would be small under this alternative. Therefore, the potential problems that a permittee could experience if lands that he or she grazes under permit were acquired by someone else would be minimized under this alternative (SA).								
Added cost to permittees by wilderness preservation	NA	No added cost (NS)	NA	No added cost (NS)	NA	NA	NA	NA	No added cost NS)
Loss of livestock grazing during riparian improvement	Riparian improvement efforts would be minimal, therefore, there would be no loss of grazing during rehabilitation (NS) ------->								
WILD HORSES: Horse numbers	No change (NS) ---------->		NA	NA	NA	NA	NA	NA	No Change (NS)
Free roaming nature	New fence construction would not take place to impede the free roaming nature of wild horses (NS).		NA	NA	NA	NA	NA	NA	No adverse affect (NS)
Condition of wild horses	No water developments would be constructed to improve wild horse condition (NS).		NA	NA	NA	NA	NA	NA	No improvement of condition (NS)
TERRESTRIAL WILDLIFE HABITAT: Opportunity to reintroduce native species impaired	NA	No ACEC designation would impair reintroduction of peregrine falcon (SA). No wilderness designation would impair bighorn sheep reintroduction (SA).		No wilderness designation would impair bighorn sheep reintroduction (SA).	NA	Opportunity to reintroduce peregrine falcon would be impaired (SA).	NA	NA	Opportunity to reintroduce peregrine falcon & bighorn sheep would be impaird (SA).
Terrestrial riparian habitat condtion	Terrestrial riparian habitat in current poor condition would remain there and about 50 percent of those habitats in excellent, good, or fair condition would decline one condition class (SA).								
Big game habitat condition	Big game habitat currently in poor condition would remain there and about 50 percent of those habitats in good or fair condition would decline one condition class (SA).								
Identified wildlife hazards or habitat conflicts	Few wildlife hazards or habitat conflicts would be corrected (NS) ---------->								
RIPARIAN/STREAM HABITAT: Miles & acres in good or better condition	0 0 NS	1 7 SB	1 30 SB	6 116 SB	0 0 SA	NA	0 0 SA	NA	8 Miles (NS) 153 Acres (SB)
Miles & acres in less than good condition	22 161 SA	2 26 SA	121 2084 SA	247 8786 SA	46 109 SA	NA	11 102 SA	NA	449 Miles (SA) 11,268 Acres (SA)
WOODLAND PRODUCTS: Harvest levels of	Christmas trees & fuelwood would decrease (SA)	Christmas trees & fuelwood would decrease even w/o wilderness designation as management would not be implemented (SA).	NA	NA	Fuelwood would decrease (SA)	Christmas trees & fuelwood would decrease (SA).	NA	Christmas trees & fuelwood would decrease (SA).	Harvest levels of Christmas trees & fuelwood would decrease by more than 10 % (SA)
Intensive management of	None (SA)	None (SA)	NA	NA	None (SA)	None (SA)	NA	None (SA)	No intensive management (SA)
MINERALS: Restricted mineral development because of wilderness designation	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS).	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS).	NA	NA	NA	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS).
Acres where time of year restrictions would slow oil/gas & geothermal development	NS	NS	NS	170,800 acres (25%) for sage grouse (SA)	42,200 acres (20%) for sage grouse (SA)	NS	NS	56,300 acres (17%) for sage grouse (SA)	NS

NS = No significant impact; NA = Not applicable; SB = Significant Beneficial Impact; and SA = Significant Adverse Impact

RESOURCE PRODUCTION

ALTERNATIVE

ISSUE 1: LANDS

1. Land values may decrease.

The sale of up to 93,150 acres of public land in either the short or long-term could flood the real estate markets of West Wendover, Wells, Jackpot, and Montello. Therefore, significant adverse impacts to land values in these communities may occur in both the short and long-term.

ISSUE 2: CORRIDORS

1. Utility and transportation companies would benefit from long range planning.

The designation or identification of 1023 miles of utility and transportation corridors would provide the maximum opportunity for utility and transportation companies to plan facilities. Also, including all routes for the proposed White Pine Power and Thousand Spring Power Projects is extremely beneficial to these companies. These impacts are significantly beneficial in both the short and long-term.

2. Resource values would be degraded.

Designation or identification of 1023 miles of corridors is expected to have significant adverse impacts to visual quality, wilderness character, and wildlife habitat in both the short and long-term. These resources would be affected because of both the location of some corridors and their three to five mile widths in specific areas.

Corridors segments P-G, R-Q, J-T; T-N; W-D; U-B I-U; G-F; I-J; UU-VV; L-BB; BB-AA; II-BB; BB-M; L-CC; R-Q; S-K; and X-K on Map 2-8 would cause significant visual impairment.

The solitude and primitive recreation experience within the northern portion of the South Pequop WSA would be impaired by the adjacent corridor segment MM-NN.

Bald eagles would be adversely impacted from increased shooting deaths as a result of power-line placement near highways on segments HH-L; L-M; M-N; M-LL; BB-AA; and O-P. Wintering bald eagles would be adversely impacted if construction took place from November 1 to March 31 on segment I-U.

Crucial deer summer range would be adversely impacted if construction took place from April to October 31 on segment PP-G.

Segments W-B and W-D would impair historic peregrine falcon habitat suitability for species reintroduction.

ISSUE 3: ACCESS

1. Public access easement through important access routes would be acquired.

This alternative would emphasize acquisition of easements important for the public use and BLM administration of livestock grazing, woodland products, and minerals. Therefore, the acquisition of public access easement on 11 roads (67 miles) would have significant beneficial impacts to these resources in the long-term.

2. Public access through important access routes would be lost.

This alternative would not emphasize acquisition of easements important for the public use and BLM administration of recreation, wilderness areas, wild horses, and terrestrial and riparian habitats. Therefore, a significant adverse impact to these resources is expected in the long-term as access across 24 roads (71 miles) is lost.

ISSUE 4: RECREATION

1. Recreation opportunities available would be enhanced or degraded.

The quality of the camping experience is expected to be enhanced at Ruby Marsh Campground and camping and picnicking enhanced at Tabor Creek Recreation Area. Visitors at Ruby Marsh Campground would have improved and better maintained facilities and additional services of firewood and natural interprtation. Tabor Creek visitors would observe less compaction of soils, reduced vegetation loss, fewer fire rings, and better wildlife habitat. These are significant beneficial short and long-term impacts.

Visitation at Ruby Marsh Campground would increase from 11,300 visitor days or 270,000 visitor hours per year currently to about 19,200 visitor days or 460,000 visitor hours in the year 2004. Tabor Creek visitation would increase from 900 visitor days or 16,000 visitor hours per year now to 1,800 visitor days or 32,000 visitor hours in the same period. These are significant beneficial long-term impacts.

The quality of the floatboating experience on Salmon Falls Creek would be enhanced through facility development, public education, and monitoring efforts. Garbage and human waste at sites along the river would be reduced despite expected increases in yearly visitation from 100 visitor days currently to 300 visitor days in the year 2004. The quality enhancement is a significant beneficial short and long-term impact and the increased recreation use is a significant beneficial long-term impact.

Impacts of recreation opportunities at Crittenden Reservoir would be the same as those of the No Action ALternative.

The quality of the camping and fishing experience along Mary's River (on public land in the vicinity of the Orange Bridge) would be enhanced through primitive facility development, public education, and monitoring efforts. Litter along the stream would also be reduced. This is a significant short and long-term beneficial impact.

The improvement of stream and riparian corridors would generally enhance opportunities for hunting, fishing and wildlife observation in those specific area. However, these significant beneficial short and long-term impacts would be outweighed by the significant adverse long-term impacts on those unimproved areas. In most of the resoure area opportunities for hunting, fishing, and wildlife observation would be reduced as aquatic, riparian, and big game habitats continue to lower in condition.

Initial impacts on wildlife populations would be negligible. However, in the long-term there would be a decrease in antelope, sage grouse, and mule deer populations. These changes would result in a decrease in hunter days overall. Hunter days for mule deer are estimated to decrease about 25 percent resource area wide from 11,725 to 8,794 annually over the long-term. This is a significant adverse long-term impact.

2. ORV use would be adversely impacted.

ORV use on about 160 acres at the Ruby Marsh Campground would be limited to designated roads and trails. Since more than 99 percent of the resource area would remain open to ORV use without limitiations or restrictions there would be no significant impact in the short or long-term.

ISSUE 5: WILDERNESS

1. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be preserved on 71,448 acres.

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	25,830	29,835
Goshute Peak	45,618	24,152
South Pequop	0	41,090
Bad Lands	0	9,426
TOTAL	71,448	104,503

Designation by Congress of 71,448 acres in two wilderness areas would preserve their wilderness character by maintaining their natural character and preserving the opportunity to experience solitude and/or primitive and unconfined recreation in a natural setting within their boundaries. This is a significant beneficial long-term impact.

Wilderness designation would also result in beneficial impacts to wildlife, wild horses, watersheds, cultural resources, and unique woodland species in the Bluebell and Goshute Peak WSAs. Wildlife habitat would be protected and limitations on ORV use would reduce harassment of wildlife and wild horses. Watersheds would be afforded added resource protection because of limitations on surface disturbing activities such as road construction. The integrity of cultural resource sites would also be enhanced by reduced access and artifact collecting. Unique plant species such as bristlecone pine and white fir would also be protected.

2. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be lost on 104,503 WSA acres.

Impacts would be the same as those of the No Action Alternative but on 104,503 acres.

ISSUE 6: LIVESTOCK GRAZING

1. Present licensed use would increase to preference or above.

Grazing at or above the preference level would be achieved in the short-term as range improvements and grazing management are implemented. The majority of forage needs during the critical spring growth period would be met through increased production. Increases by RCA could be as folows: Cherry Creek (2,872 AUMs, 25%); Spruce/Goshutes (70,213, 143%); Mary's River (8,927, 20%); O'Neil/Salmon Falls (3,580, 5%); Goose Creek (2,746, 12%); Pilot/Crittenden (1,538, 5%); Metropolis (1,566, 4%); and Ruby/Wood Hills (3,346, 22%). These increases would meet the ten percent level, showing a significant short and long term beneficial impact in all except the O'Neil/Salmon Falls, Pilot/Crittenden, and Metropolis RCAs.

2. Native range condition would improve.

The proposed seedings would provide for the spring forage needs of current livestock numbers and the majority of the requirements for additional livestock numbers. Current levels of grazing pressure would continue on native range although supplementing spring forage would allow deferment of use by livestock. Incorporating this into improved grazing management and with other range improvements, range condition (primarily grasses and forbs) would be expected to improve over the long-term in the Cherry Creek, Spruce/Goshutes, Mary's River, O'Neil/Salmon Falls, Goose Creek and Pilot/Crittenden RCAs. This improvement in native range condition would not be to the extent of one condition class on ten percent of the above RCAs, which constitutes the threshold of significance.

The Metropolis and Ruby/Wood Hills RCAs are composed primarily of small crested wheatgrass allotments with limited native range potential. Therefore, impacts are not significant on any of the eight RCAs or the resource area as a whole.

3. Livestock management problems would occur as a result of land disposals.

Impacts would be the same as those of the No Action Alternative but of larger magnitude as the potential exists for disposal of 93,150 acres.

4. No added costs to livestock operators would occur because of wilderness designations.

With wilderness designation, all access routes determined to be roads during BLM's wilderness inventory would remain open for all publics. All routes within designated wilderness areas determined to be ways would be closed to vehicular traffic. Therefore, livestock operators in designated wilderness areas would generally be required to manage their livestock on horseback or foot while leaving their vehicles on border roads or at the terminal end of cherry-stemmed roads. This would slightly add to any affected operator's cost.

However, since this alternative recommends as nonsuitable for wilderness preservation many areas of the WSAs containing ways, there are no expected adverse impacts to livestock operators.

5. Loss of livestock grazing would occur during riparian improvement.

Livestock forage in riparian zones would be excluded from grazing during improvement. About 1,610 acres, or less than one percent of the Wells RA, would be involved. Many of the areas are producing only a fraction of their potential at present. The loss would amount to 537 AUMs or about 0.14 percent resource area wide. This would be an insignificant impact, particularly when considering the long-term benefits of increased forage production that improvement would offer.

ISSUE 7: WILD HORSES

1. Wild horse herd numbers would be reduced in all herd areas. The free roaming nature of wild horses would be adversely impacted.

Impacts to wild horse herds would be the same as the No Action Alternative except that wild horse numbers would be reduced by 50 percent in all herd areas. This reduction impacts the Toano and Spruce-Pequop herds by resulting in less than 50 animals in each herd. This is a significant adverse short and long-term impact on these two herds.

Overall, all herd areas would be adversely impacted by fences for livestock control and management. These fences would impede free movement of horses and inhibit their free roaming behavior. These are significant adverse short and long-term impacts.

2. The condition of remaining wild horses would improve.

The development of waters, including three proposed for wild horses, would improve the condition of those wild horses remaining after the 50 percent reduction in numbers and would relieve stress on their colts. This is a significant short and long-term beneficial impact to the remaining horses.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. The opportunity for reintroduction of native wildlife species would be impaired while wintering bald eagle habitat would be improved.

The impacts to peregrine falcon, are the same as those of the No Action Alternative because none of the proposed livestock AUM increases are expected to take place in peregrine falcon habitat. Impacts to elk and sharp-tailed grouse are the same as those of the No Action Alternative and for the same reason.

Impacts to potential reintroduction of bighorn sheep in the Bad Lands WSA and the Pilot/Crittenden RCA would be the same as those of the No Action Alternative. Even though Bluebell and Goshute Peak are suitable as wilderness, the potential conflicts with domestic sheep cause concerns with bighorn sheep reintroduction. Therefore, adverse impacts to bighorn sheep reintroduction are significant in the short and long-term in all these areas.

Slight improvement of existing habitat for wintering bald eagles should occur by promoting use of rangelands. Black-tailed jackrabbit populations would increase and be maintained at higher levels (Beck, 1980). Since Black-tailed jackrabbits are the primary prey base for wintering bald eagles this alternative should improve bald eagle habitat (Page and Miller, 1981). This is a significant long-term beneficial impact.

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

Impacts would be similar to those of the No Action Alternative except of greater magnitude in that 75 percent of those habitats in excellent, good, or fair condition would decline one condition class in all RCAs and the resource area as a whole. This would be a significant short-term adverse impact. The other 25 percent of these acres would remain in their current condition because of their physical location which limits livestock impacts.

3. Big game habitat would generally be maintained in its current condition class or decline from fair or better to the next lower condition class.

The projected long-term trend of known condition (in acres) of crucial and noncrucial big game (deer and antelope) habitats are shown below by RCA.

Projected Crucial Wildlife Habitat Condition

RCA	Good	Fair	Poor
Cherry Creek	4,350	17,400	66,750
Spruce/Goshutes	0	16,200	79,200
Mary's River	——	Unknown	——
O'Neil/Salmon Falls	7,750	23,250	40,800
Goose Creek	0	0	0
Pilot/Crittenden	0	0	0
Metropolis	——	Unknown	——
Ruby/Wood Hills	0	0	27,900
TOTAL	12,100	56,850	214,650

Projected Noncrucial Wildlife Habitat Condition

RCA	Good	Fair	Poor
Cherry Creek	6,850	31,050	89,800
Spruce/Goshutes	1,725	44,400	806,975
Mary's River	0	37,200	111,600
O'Neil/Salmon Falls	5,875	23,450	52,375
Goose Creek	0	15,525	124,775
Pilot/Crittenden	0	3,375	10,125
Metropolis	0	0	24,900
Ruby/Wood Hills	0	0	82,800
TOTAL	14,450	155,000	1,303,350

Livestock utilization on the key browse component of native range would remain at present levels. The improvement in native range, primarily the grass-forb component, would occur as a result of deferment of livestock use during the critical growth period. This would be beneficial to antelope and mule deer summer habitat.

It is anticipated however, that the browse component of native range, one of the more important components of mule deer winter range, would not improve and would enter into a downward trend in habitat condition. The majority of big game habitat in the Wells RA is mule deer winter range. Therefore, it is anticipated that all of the habitat in current poor condition would remain there, about 75 percent of the habitat in good or fair condition would decline a condition class, and in all RCAs and the resource area as a whole at least 50 percent of the known habitat condition would be in poor condition. These are not expected to result in reasonable numbers and significant long-term adverse impacts would occur. Also, of those acres which would remain in their current condition class, their condition could improve, decline, or remain static within that class. Part of this decline in big game habitat condition would be attributable to the development of wells and pipelines for livestock in big game habitat. The fact that these nonwatered areas would be more severely impacted by livestock grazing would partially contribute to lowering the quality of the habitat and result in increased competition.

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

The modification of 475 miles or about 80 percent of the existing fence hazards within crucial big game habitat would be a significant beneficial impact in both the short and long-term.

The hazards in noncrucial big game habitat and habitat conflicts near springs and wet meadows would not be corrected. Therefore, impacts to them would be the same as the No Action Alternative.

ISSUE 9: RIPARIAN/STREAM HABITAT

1. About 52 miles of protected stream (in addition to those miles protected without action) and 1610 acres of streamside riparian habitat would be maintained in a good or better condition class.

Any aquatic and riparian habitat improved from a declining state would result in direct positive benefits to fisheries and water resources. The 52 miles of stream include all 35 miles of stream currently occupied by threatened or endangered fish species. Some of the significant short and long-term beneficial impacts would be as follows:

1. Riparian vegetation would provide cover for fish and stream shading, protecting waters from direct solar radiation which results in excessively high water temperature, a major limiting factor of fishery resources.

2. Deep rooted riparian vegetation would stabilize stream banks, allowing the development of quality pools and stopping accelerated erosion of stream banks (occasional stream bank and channel alterations are natural and would still occur). It would also collect stream sediments, resulting in upgrading the quality of the stream

banks and assisting in restoring water tables.

3. Riparian vegetation in good condition would maintain the microclimate environment crucial to the living organisms utilizing these habitat areas. The microclimate environment has high humidity relative to upland areas; reduced summer evaporation and winter ice damage because of vegetative insulation (providing moderated temperature extremes both summer and winter); and water storage (reduced surface runoff). Water storage results in moderated stream flow, extended periods of intermittent stream flow, or maintenance of flows to reestablish perennial flows where they have historically been reduced to intermittent.

Once improved to a good condition class, closely monitored livestock grazing would be used as a management tool to maintain protected areas in a productive state.

Other impacting activities such as mining and road building would remain a management concern of limited significance to be handled in a case-by-case manner.

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

Aquatic riparian habitat condition would continue to decline as a result of many factors including livestock grazing, mining activities, wild horses, and road construction.

Under this alternative, 405 miles or 89 percent of the resource area's streams and 9,810 acres or 86 percent of the streamside riparian habitat would continue to decline in overall habitat condition in the long-term. The projected short and long-term significant adverse impacts of this alternative are displayed by RCA in Tables 4-4 and 4-5.

Increases in livestock numbers would probably accelerate the rate of condition decline, but the significance of this cannot be determined.

ISSUE 10: WOODLAND PRODUCTS

1. Woodland product harvest levels would increase.

Short and long-term beneficial impacts would result as woodland product harvest levels increase by more than 10 percent. The reason for this increased harvest level is that a sustained yield concept would be utilized to provide additional cutting areas over time. This would avoid the eventual elimination of woodland products that would occur under the No Action Alternative.

Portions of the Bluebell and Goshute Peak WSAs and all of the South Pequop WSA would not be recommended as suitable for wilderness designation. Upon Congressional release of these areas, the following listing displays the number of Christmas trees that could be cut yearly on a sustained yield basis by commerical and private interests in these areas.

WSA	Christmas Trees
Bluebell	250
Goshute Peak	50
South Pequop	400
TOTAL	700

These trees could increase the yearly commercial harvest by approximately 21 percent and the private harvest by about 17 percent in the resource area.

2. Intensive management of woodland products would occur.

The management actions outlined in Chapter 2 would adequately manage and protect the woodland resources. This would make resource deterioration and declining stand condition minimal and would allow full harvest levels to be attained in the short and long-term. Quality production on managed sites would be maintained or enhanced despite increases in production levels. These are short and long-term significant beneficial impacts.

Impacts on woodland products within the checkerboard lands would be the same as the No Action Alternative.

Prime Christmas tree areas could be destroyed by chaining or burning if these areas are not properly coordinated and planned.

The acquisition of public access easements for

TABLE 4-4

STREAMSIDE RIPARIAN HABITAT CONDITION IN ACRES BY RCA

RESOURCE PRODUCTION ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		66.2 (58.6)	15.4 (2.6)	79.5 (99.9)		161.1
Spruce/Goshutes	12.8 (3.2)	19.2 (3.2)	(25.6)			32.0
Mary's River		478.3 (388.1)	439.1 (94.6)	1196.8 (1631.5)		2114.2
O'Neil/Salmon Falls	115.2 (28.8)	1585.1 (1265.3)	809.2 (403.3)	6362.9 (7175.0)	Approx. 30	8902.4
Goose Creek		18.0 (18.0)		90.8 (90.8)		108.8
Pilot/Crittenden						
Metropolis			7.7 (1.9)	94.7 (100.5)		102.4
Ruby/Wood Hills						
TOTAL ACRES	128.0 (32.0)	2166.8 (1733.2)	1271.4 (528.0)	6824.7 (9097.7)	Approx. 30	11420.9

Source: Values for this table were derived from base data shown in Chapter 3.

woodland product management and/or harvest is a significant beneficial short and long-term impact.

Aspen stands would continue to decline in overall stand condition and vigor.

IMPACTS ON MINERALS

1. Mineral development would not be adversely impacted because of wilderness designation.

No areas having good or better mineral potential exist in the 25,830 acres of the Bluebell WSA or 45,618 acres of the Goshute Peak WSA recommended as suitable for wilderness designation. Therefore, no significant adverse impacts to minerals would occur in the long-term.

2. Mineral development would not be limited because of time of year restrictions to protect crucial mule deer winter range.

Impacts to mineral development would not be significant in any RCA or the resource area because of time of year restrictions to protect crucial mule deer habitat.

TABLE 4-5
AQUATIC HABITAT CONDITION IN MILES BY RCA

RESOURCE PRODUCTION ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		7.1 (7.1)		14.6 (14.6)		21.7
Spruce/Goshutes	0.8 (0.2)	1.3 (0.2)	 (1.7)			2.1
Mary's River		21.5 (19.4)	4.2 (0.7)	96.8 (102.4)		122.5
O'Neil/Salmon Falls	8.7 (2.2)	46.1 (28.5)	39.5 (26.2)	155.0 (192.4)	Approx. 5	254.3
Goose Creek		2.7 (2.7)	11.0 (2.8)	32.0 (40.2)		45.7
Pilot/Crittenden						
Metropolis			1.2 (0.3)	9.7 (10.6)		10.9
Ruby/Wood Hills						
TOTAL ACRES	9.5 (2.4)	78.7 (57.9)	55.9 (31.7)	308.1 (360.2)	Approx. 5	457.2

Source: Values for this table were derived from base data shown in Chapter 3.

3. No adverse impact would occur from segregation of the Ruby Marsh Campground.

A mineral report covering the 160 acre Ruby Marsh Campground would be written. One of two actions would result, neither of which would adversely impact minerals. If in the report it was determined that the lands are nonmineral in character then the withdrawl would be recommended and no adverse impacts to minerals would occur. However, if it were determined that the lands are mineral in character the proposed withdrawl would not be recommended. This would also have no adverse impacts to the affected minerals.

ECONOMIC IMPACTS

Recreation and Wildlife

Impacts would be the same as those of the No Action alternative except that expenditures, income, and employment would be reduced annually by $572,900, $169,500, and 24 people, respectively. These would be significant

long-term adverse impacts as they represent a decrease of about 30 percent to the recreation sector.

Wilderness

The following listing shows the long-term annual visitor days and associated benefits of the four WSAs.

WSA	Visitor Days	Visitor Day Benefits
Bluebell	1,500	$15,000
Goshute Peak	3,000	30,000
South Pequop	300	3,000
Bad Lands	1,000	10,000
TOTAL	5,800	$58,000

These benefits represent an annual increase of $40,500 over the current situation and are insignificant to the recreation sector.

Livestock Grazing

A ranch budget computer analysis was utilized in measuring the impacts on various ranching economic variables. The percentage long-term increase or decrease of gross livestock sales and net ranch income by ranch size/type are shown below. Those changes of over five percent would be significant long-term impacts.

Ranch Size/ Type	Gross Livestock Sales	Net Ranch Income
Small	+13.5	-16.3
Medium	+ 5.8	+44.4
Medium/Large	+ 7.6	- 3.1
Large	+ 6.0	+10.0
Sheep	+11.7	+11.6

Cumulative impacts on the livestock industry would increase the resource area herd size by about 2,800 cows and 8,700 sheep. The corresponding increase in gross livestock sales would be $1,275,000 annually or 8.0 percent. The increase in net ranch income would be $537,200 annually. This would result in an increase of agricultural employment of 30 persons, or about 10 percent of the 1980 ranching employment in the Wells RA. These would be long-term significant beneficial impacts. The following listing displays these cumulative impacts by RCA.

RCA	Increase in Gross Livestock Sales	Increase in Net Ranch Income
Cherry Creek	$ 25,025	$ 3,375
Spruce/Goshutes	938,594	412,952
Mary's River	108,060	53,280
O'Neil/Salmon Falls	31,315	17,020
Goose Creek	34,296	9,948
Pilot/Crittenden	7,180	3,545
Metropolis	16,460	9,052
Ruby/Wood Hills	114,070	28,028
TOTAL	$1,275,000	$537,200

Since these economic impacts would especially impact the small and medium sized operators, generally, the Cherry Creek, Goose Creek and Ruby/Wood Hills RCAs would be most affected. The large increase in AUMs within the Spruce/Goshutes RCA would also greatly benefit those operators within its boundary.

Wild Horses

With the approximate 50 percent reduction in wild horse numbers there would be about a $32,000 reduction in the value of forage that the remaining horses consume annually. This would be an insignificant beneficial impact to the ranching industry.

Woodland Products

The following listing compares the current market value of woodland products harvested with that of this alternative in the long-term.

Woodland Product	Market Value (1980 Dollars) Existing Situation	Resource Production
Fuelwood	$ 47,400	$446,250
Posts	20,600	15,075
Christmas Trees	181,440	84,000
TOTAL	$249,440	$545,325

Construction Sector

Implementation of this alternative would involve improvements for recreation, livestock, wild horses, wildlife, and riparian rehabilitation. Total cost is estimated at $9,589,400 (see Table 2-7). It is estimated that approximately 25 percent of this construction would be awarded to construction firms within the RA or within the City of Elko.

These improvements would be completed in a seven year period. If construction activity is distributed evenly throughout the period, additional revenue of approximately $342,500 per year (in 1980 dollars) would accrue to local construction firms. This increase in revenue would produce additional personal income to owners and employees of local construction firms of about $139,500 per year. This additional income could provide employment for about 68 additional county construction workers or 10.3 percent of that labor force. About 26 other service oriented jobs would be generated. Therefore, an increase of 94 jobs or 5.0 percent increase in the total Wells RA employment would result. The increase in personal income and employment would be significant to the construction sector and to the total resource area economy.

IMPACTS ON SOCIAL VALUES

Lands

Persons interviewed were generally aware of the problems associated with the checkerboard land pattern and felt that management both on private and public lands would be enhanced through consolidation. Disposal of public lands, primarily through sale, would be emphasized in this alternative. Local and state populations and governmental bodies are greatly in favor of this idea as they desire more private, state, and local government controlled lands and less Federally owned lands in the state. However, if local private interests and/or local government entities found themselves unable to meet fair market prices, their interest in the program would wane as public lands were sold to conglomerate buyers from outside the county or state.

Corridors

This alternative would be highly favored by utility and transportation companies in the region. The public can be expected to support this over the No Action Alternative, but most persons would also feel that the number of corridors proposed are exorbitant and would, opt for another alternative. Many persons feel that those corridors selected should also have a minimum impact upon visual resources.

Access

This alternative would be highly favored by those persons with interests in livestock, woodland products, and mining. Those desiring access for recreation, wilderness, and other pursuits would not support this alternative.

Recreation

This alternative would receive slightly less support from the public than the Midrange Alternative. Most persons interviewed felt that existing areas should be maintained for the recreating public. Therefore, the upgrading of facilities and maintenance of operations at the Ruby Marsh Campground and Tabor Creek would generally meet with approval by the public.

Some people felt that the Bureau should provide minimal development along Salmon Falls Creek and Mary's River to meet public health and safety standards. These people would support the proposed developments at these areas.

Wilderness

Residents of Elko County indicate they would support this alternative next to the No Action Alternative, as they are generally against any kind of limitations and/or restrictions placed upon individuals, groups, or business.

State and national conservation organizations would oppose this alternative mainly because it removes from designation two entire WSAs. They have stated before their opinion that the Elko District wilderness inventory was too restrictive in selecting WSAs for review. They strongly believe that portions of all four WSAs are suitable for wilderness designation.

Livestock Grazing

This alternative would be highly favored by the ranching community. Other persons and groups with interest in wilderness, wild horses, terrestrial wildlife, and riparian areas would strongly oppose this alternative.

Wild Horses

The reduction of wild horses would be favored by most ranchers. Since the ranching community is highly valued socially, culturally, and economically by Elko County residents, most local persons would generally agree that wild horse numbers should be reduced.

National attitudes differ radically from local attitudes in that preservation of wild horses is favored, as evidenced by the passage of the Wild Horse and Burro Act of 1971. Several groups are also devoted to the protection and preservation of wild horses and vary in their approaches to management of wild horse populations. WHOA supports multiple use of habitat management while the American Horse Protection Association (AHPA) holds the attitude that horses should be left alone for nature to take care of. Generally, these group's feel that minimal control of wild horse numbers is desirable and they would oppose this alternative.

Terrestrial Wildlife Habitat

Forage for terrestrial wildlife would be reduced under this alternative with a corresponding reduction in hunter days. The ranching community, while generally supporting increases in wildlife populations, feels that livestock grazing is more important and would therefore support this alternative. They also might take exception to utilizing Federal tax dollars to modify fences for wildlife enhancement purposes. Wildlife advocates would view this as only a token measure toward proper wildlife habitat management.

Riparian/Stream Habitat

Under this alternative 52.4 miles of stream and 1,610 acres in the resource area are designated for intensive management resulting in riparian/stream habitat improvement. The ranching community is generally in favor of riparian and stream improvement but is strongly opposed to certain methods. Local, State, and national sportsmen's groups, professional fishery societies, and conservation organizations as well as Federal, state and local biologists, however, would point to and agree with recent research studies which show that implementation of livestock grazing management systems without reduction of current utilization rates would not result in desired improvement levels.

Woodland Products

This alternative would emphasize intensive management for commercial woodcutters over private individuals on three RCAs in the resource area. The local populace would not generally support this alternative as many gather fuelwood and Christmas trees themselves rather than purchasing from a commercial cutter. The Nevada and national population could be expected to agree with Elko County residents on this issue.

Commercial cutters serving southern Idaho and Salt Lake Valley would most likely support this alternative over any of the others.

Minerals

Wilderness designation would preclude mineral development in parts of the resource area. This aspect of the alternative would not be supported by the mining community.

The emphasis on legal public access acquisitions would be satisfactory to miners. Mining executives stressed that the key to mineral development in the resource area is the "open space" that is abundant in Nevada.

OVERALL SUMMARY OF IMPACTS

The impacts of this alternative in the RCAs and the resource area are summarized in Table 4-6.

TABLE 4-6

IMPACTS OF THE RESOURCE PRODUCTION ALTERNATIVE

ISSUE/Impact	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Saimon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Land values could decrease	NA	Land values in West Wendover could decrease (SA).	NA	Land values in Jackpot could decrease (SA).	NA	Land values in Montelio & Pilot Valley could decrease (SA)	Land valuues in Wells could decrease (SA).	Land vaiues in Wells & Clover Valley could decrease (SA).	Land values could decrease (SA).
CORRIDORS: Utility & transportation companies would benefit.	Corridor designations and identifications would provide maximum opportunities for long range planning by utility and transportation companies (SB).				NA	Corridor designations and identifications would provide maximum opportunities for long range planning by utility and transportation companies (SB).			
Designation or identification of corridors would impact:	Visual quality (SA) ---------->				NA	Visual quality (SA) ---------->			
	Bald eagles (SA) ----------> Crucial deer winter range (SA)				NA	Peregrine falcon historic habitat (SA)	Crucial deer winter range (SA)	Bald eagles (SA)	SA
		Wilderness character within the northern portion of the South Pequop WSA (SA).							
ACCESS: Public access easements would be acquired.	NA	Public access easements would be acquired for access routes important for the public use and BLM administration of livestock grazing, woodland products, and minerals.							
		4	0	4	1	1	1	0	11 Roads (SB)
		23	0	20	3	17	4	0	67 Miles (SB)
Public access would be lost	NA	Public access through routes important for public use and BLM administration of recreation, wilderness areas, wild horses, and terrestrial wildlife and riparian habitats would be lost (SA).							
		7	4	6	1	2	3	1	24 Roads (SA)
		17	5	9	1	2	30	7	71 Miles (SA)
RECREATION: Recreation opportunities would be enhanced or degraded.	The quality of opportunities for hunting, fishing, and wildlife observation would decline (SA). Mule deer hunting would be reduced by about 25 percent (SA) while general recreation visitor day use would increase (SB).								
		Camping & picnicking enhanced at Tabor Cr. Increase 800 visitor days (SB).		Floatboating enhanced on Salmon Falls Cr. Increase 200 visitor days (SB).		Fishing degraded at Crittenden Reservoir (SA).		Camping enhanced at Ruby Marsh Campground. Increase 7900 visitor days (SB).	
		Camping & fishing enhanced along Mary's River (SB)							
ORV use would be adversely impacted	No ORV limitations or restrictions on more than 99 percent of the resource area (NS) ---------->							160 acres limited (NS)	160 acres limited (NS)
WILDERNESS: Wilderness preservation	NA	2 Areas, 71,448 Acres (SB)	NA	0 Areas, 0 Acres NS)	NA	NA	NA	NA	2 Areas, 71,448 Acres (SB)
Loss of wilderness character	NA	3 WSAs, 95,077 Acres (SA)	NA	1 WSA, 9426 Acres (SA)	NA	NA	NA	NA	4 WSAs, 104,503 Acres (SA)
LIVESTOCK GRAZING: Licensed use increase	2872 AUMs 25% (SB)	70,213 AUMs 143% (SB)	8927 AUMs 20% (SB)	3580 AUMs 5% (NS)	2746 AUMs 12% (SB)	1538 AUMs 5% (NS)	1566 AUMs 4% (NS)	3346 AUMs 22% (SB)	94,788 AUMs 32% (SB)
Native range conditon	Native range condition would improve (NS) ---------->								
Livestock management problems as result of land disposai.	The potential problems that a permittee could experience if lands that he or she grazes under permit were acquired by someone else would be maximized under this alternative as it would dispose of the greatest amount of lands (SA).								
	NA	SA	NA	SA	NA	SA	SA	SA	SA
Added cost to permittees by wilderness preservation	NA	0 hours of added labor per year (NS)	NA	0 hours of added labor per year (NS)	NA	NA	NA	NA	0 hours of added labor per year (NS)
Loss of livestock grazing during riparian improvement	19 AUMs 0.13% (NS)	NA	119 AUMs 0.22% (NS)	393 AUMs 0.55% (NS)	6 AUMs 0.02% (NS)	NA	0 AUMs (NS)	NA	537 AUMs 0.14% (NS)
WILD HORSES: Horse numbers	50% reduction (SA)	50% reduction in all herds but Toano (SA)	NA	NA	NA	NA	NA	NA	50% reduction in all herds but Toano (SA)
Free roaming nature	Newly built fences would impede free roaming nature of all 6 herds (SA).		NA	NA	NA	NA	NA	NA	Fences would impede free roaming nature (SA)
Condition of wiid horses	Water developments would improve conditon of wild horses (SB).		NA	NA	NA	NA	NA	NA	Condition would improve (SB)
TERRESTRIAL WILDLIFE HABITAT: Opportunity to reintroduce native species impaired	NA	No ACEC designation would impair reintroduction of peregrine falcon (SA). Even with wilderness designation, potential conflicts w/ domestic sheep impair reintroduction of bighorn sheep (SA)		No wilderness designation would impair bighorn sheep reintroduction (SA).	NA	Opportunity to reintroduce peregrine falcon would be impaired (SA).	NA	NA	Opportunity to reintroduce peregrine falcon & bighorn sheep would be impaired (SA).
Terrestrial riparian habitat condition	Terrestrial riparian habitat in current poor condition would remain there and about 75 percent of those habitats in excellent, good, or fair condition would decline one condition class (SA).								
Big game habitat condition	Big game habitat currently in poor condition would remain there and about 75 percent of those habitats in good or fair condition would decline one condition class (SA).								
identified wildlife hazards or habitat conflicts	About 80 percent of existing hazards in cruciai big game habitat would be corrected (SB) whereas hazards in noncrucial habitat and conflicts near springs and meadows would not (SA).								
RIPARIAN/STREAM HABITAT: Miles & acres in good or better condition	7 596 SB	1 6 SB	19 388 SB	30 1294 SB	3 18 SB	NA	0 0 SA	NA	60 Miles (SB) 1765 Acres (SB)
Miles & acres in less than good condition	15 103 SA	2 26 SA	103 1726 SA	223 7608 SA	43 91 SA	NA	11 102 SA	NA	397 Miles (SA) 9656 Acres (SA)
WOODLAND PRODUCTS: Harvest levels of	Fuelwood would increase (SB)	Christmas trees & fuelwood would increase w/o wilderness designation of parts of Bluebell & Goshute Peak & all of South Pequop (SB)	NA	NA	Fuelwood would increase (SB)	Fuelwood would increase (SB)	NA	None (NS)	Harvest levels of Christmas trees & fuelwood would increase by more than 10% (SB)
intensive management of	Christmas trees & fuelwood (SB)		NA	NA	Fuelwood (SB)	Christmas trees & fuelwood (SB)	NA	None (NS)	Christmas trees & fuelwood (SB)
MINERALS: Restricted mineral development because of wilderness designation	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS).	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS).	NA	NA	NA	NA	0 acres having good or high mineral potential recommended as suitable for wilderness (NS)
Acres where time of year restrictions would slow oil/gas & geothermai development	NS	NS	NS	NS	NS	NS	NS	NS	NS

NS = No significant impact; NA = Not applicable; SB = Significant Beneficiai impact; and SA = Slgnificant Adverse impact

MIDRANGE

ALTERNATIVE

ISSUE 1: LANDS

1. Land values may decrease.

The sale of up to 18,065 acres of public land in either the short or long-term could have similar significant adverse impacts as the Resource Production Alternative but of a lesser magnitude.

ISSUE 2: CORRIDORS

1. Utility and transportation companies would benefit from long range planning.

The designation or identification of 566 miles of utility and transportation corridors, including some routes for the proposed White Pine and Thousand Springs power projects, would provide more than adequate opportunities for utility and transportation companies to plan facilities. These impacts are significantly beneficial in both the short and long-term, but to a lesser degree than the Resource Production Alternative.

2. Resource values would be degraded.

Designation and/or identification of 566 miles of corridors is expected to have significant short and long-term adverse impacts to visual quality, wilderness character and wildlife habitat. These resources would be affected because of the locations of some of the corridors. Impacts are generally fewer than in the Resource Production Alternative. Corridor segments G-F; K-I; I-U; and U-B on Map 2-9 would cause significant visual impairment.

The solitude and primitive recreation experience within the northern portion of the South Pequop WSA would be impaired by the adjacent corridor segment MM-NN. Corridor segment Q-XX-P would be within the southeastern portion of the Goshute Peak WSA The location of a powerline, railroad and/or other transportation routes in this area would not only greatly impair the experience of solitude and primitive recreation but would also cause the loss of naturalness in the area.

Bald eagles would be adversely impacted from increased shooting deaths as a result of powerline placement near highways on segment P-O. Wintering bald eagles would be adversely impacted if construction took place from November 1 to March 31 on segment I-U.

ISSUE 3: ACCESS

1. Public access easement through important access routes would be acquired.

This alternative would emphasize acquisition of easements important for the public use and BLM administration of all resources. Therefore, the acquisition of public access easement on 35 roads (138 miles) would have significant beneficial impacts to all resources in the long-term.

2. Public access through important access routes would not be lost.

Since this alternative would acquire access easements through all routes important for public use and BLM administration of all resources, no significant adverse impacts are expected in the long-term.

ISSUE 4: RECREATION

1. Recreation opportunities available would be enhanced or degraded.

Impacts at Ruby Marsh Campground, Tabor Creek Recreation Area, and Salmon Falls Creek would be the same as those of the Resource Production Alternative.

Acquisition of lands around Crittenden Reservoir through exchange would facilitate improved recreation management opportunities. Access would be improved and facility development would reduce current resource damage while enhancing the overall quality of the fishing experience. Garbage and human waste around the reservoir would be reduced despite expected increases in yearly visitation from 3,200 angler days currently to 3,500 angler days by the year 2004. The enhanced quality is a beneficial long-term impact whereas the increased recreation use is not significant.

Impacts along the Mary's River would be the same as the No Action Alternative.

The improvement of stream and riparian corridors would generally enhance opportunities for hunting, fishing, and wildife observation in those specific areas. Since these areas are where most of these activities currently take place, these significant beneficial short and long-term impacts would slightly outweigh the significant adverse long-term impacts on those unimproved areas. Initial impacts on wildlife populations would be negligible, however, in the long-term there would be an increase in antelope, sage grouse, and mule deer populations. These changes would result in an increase in hunter days overall. Hunter days for mule deer are estimated to increase by about 35 percent resource area wide from 11,725 to 15,828 annually. This is a significant beneficial long- term impact.

2. ORV use would be adversely impacted.

Same impacts as the Resource Production Alternative.

ISSUE 5: WILDERNESS

1. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be preserved on 159,881 acres.

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	48,308	7,357
Goshute Peak	65,585	4,185
South Pequop	37,573	3,517
Bad Lands	8,415	1,011
TOTAL	159,881	16,070

Impacts would be the same for the four wilderness areas of this alternative as they were for the two wilderness areas of the Resource Production Alternative with the following exceptions.

1. About 159,881 acres would be preserved in their wildeness character. These are the areas considered manageable as wilderness in the long-term through utilization of the Wilderness Study Policy (Bureau of Land Management 1982a).

2. Designation of Bad Lands as a wilderness area would: preserve outstanding opportunities for stream fishing, hiking, and camping in a canyon setting; protect its excellent scenic quality; and enhance the quality of its important surface watershed.

2. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be lost on 16,070 acres.

Impacts would be the same as those of the No Action Alternative but on 16,070 acres.

ISSUE 6: LIVESTOCK GRAZING

1. Present licensed use would not change.

Present licensed use would continue at current levels. However, due to the improvement in

native range condition and for comparison with the other alternatives, the following long-term increase in AUMs (above three to five year licensed use) has been projected. These levels assume completion of range improvements and implementation of management over the short-term with increased use to occur in the long-term. Use levels by RCAs are projected as follows: Cherry Creek (1884 AUMs, 16%), Spruce/Goshutes (5,460 AUMs, 11%), Mary's River (7,251 AUMs, 16%), O'Neil/Salmon Falls (9,394 AUMs, 13%), Goose Creek (3,084 AUMs, 13%), Pilot/Crittenden (5,047 AUMs, 17%), Metropolis (772 AUMs, 2%) and Ruby/Wood Hills (409 AUMs, 3%). Based on Van Poollen & Lacey (1979) and the professional judgment of the Wells RA range staff.

2. Native range condition would improve.

Improvement in range condition in the long-term would be achieved indirectly by increasing forage production through development of crested wheatgrass seedings and/or prescribed burning, and improved grazing management while maintaining livestock use at the three to five year average use level.

Where crested wheatgrass is established, all or most spring and early summer grazing would be made on crested wheatgrass (a grazing-tolerant grass species). This increased forage production would lower overall utilization levels and allow for deferment of grazing on native range during the critical growth period without reducing livestock use below the three to five year average use level. This would promote recovery to forage potential of the allotment in the long-term, benefitting livestock and wildlife.

Prescribed burning on higher potential range would increase forage production, reducing grazing pressure and allowing improvement in range condition.

Whether an area was seeded to crested wheatgrass or burned without seeding, livestock use would be adjusted through monitoring three to five years after development of range improvements and implementation of management. Adjustments in use would take into account the vegetation needs of wildlife, watershed and other resource values. Range conditions would improve by one condition class over at least 10 percent of the RCA within the following RCAs: Cherry Creek (19%), Spruce/Goshutes (16%), Mary's River (20%), O'Neil/Salmon Falls (18%), Goose Creek (18%) and Pilot Crittenden (22%). These are significant beneficial impacts (Van Poollen and Lacey, 1979).

3. Livestock management problems would occur as result of land disposals.

Impacts would be the same as those of the No Action Alternative but of larger magnitude as the potential exists for disposal of 18,065 acres.

4. Added costs to livestock operators would occur because of wilderness designations.

Impacts would be the same as those explained in the Resource Production Alternative except that the following listing shows the additional yearly hours of labor needed in affected allotments.

WSA	Allotment	Hours
Bluebell	Big Springs	6
Goshute Peak	Spruce	8
South Pequop	Spruce	2
Bad Lands	—	0
TOTAL		16

These would not be significant long-term adverse impacts to the affected operators or to the livestock industry as a whole.

5. Loss of livestock grazing would occur during riparian improvement.

Vegetation in riparian zones would be excluded from grazing during improvement. In the Wells RA, 2,518 acres, or less than one percent of the Wells RA, would be involved. Many of the areas are producing only a fraction of their potential at present. The loss would amount to 839 AUMs or about 0.29 percent resource area wide. This would be an insignificant impact, particularly when considering the long-term benefits of increased forage production that improvement would offer.

ISSUE 7: WILD HORSES

1. Wild horse herd numbers would not change. The free roaming nature of wild horses would be adversely impacted.

Impacts on wild horse herds and their numbers would be the same as those of the No Action Alternative.

Impacts on the free roaming nature of wild horses would be the same as those of the Resource Production Alternative.

2. The condition of wild horses would improve.

The impacts would be the same as those of the Resource Production Alternative except that six water developments for wild horses and no reduction in wild horse numbers would occur.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. The opportunity for reintroduction of native wildlife species would be enhanced or maintained while wintering bald eagle habitat would be maintained.

The 6200 acre Salt Lake ACEC in the Spruce/ Goshutes RCA would ensure that any proposed action in the area would comply with established criteria developed so as to protect the viability of this area to support peregrine falcon. Recent evaluations of the historic use areas indicate that the possibility of this area to be reoccupied is good. However, the possibility also exists that it would be technically feasible to artifically reintroduce the species. These reasons make it imperative that every land management action within the 6,200 acres be very carefully evaluated. Only through ACEC designation would this be possible. Therefore, ACEC designation is a significant short and long-term beneficial impact to peregrine falcon reintroduction in the Spruce/Goshutes RCA.

The peregrine falcon habitat in the Mary's River and Pilot/Crittenden RCAs would be maintained. Even though no ACEC designations are proposed in these areas, the fact that the habitat would be monitored and adjustments made as necessary should maintain the habitat in the short and long-term. This is not a significant impact.

Wilderness designation of the Bad Lands WSA would improve the possibility for bighorn sheep reintroduction. The designation, would mean that only certain types of human disturbances and impacts would be allowed. The NDOW has expressed that with this added protection the possibility of a bighorn sheep release would be greatly enhanced over other areas without protection. The potential for reintroduction of bighorn sheep and elk adjacent to the Humboldt National Forest in the O'Neil Basin within the O'Neil/Salmon Falls RCA would also be slightly enhanced. The possibility of bighorn sheep on Pilot Peak would also be improved by blocking up land,especially above 6,000 feet. These are all significant short and long-term beneficial impacts to bighorn sheep reintroduction.

Impacts to the potential reintroduction of bighorn sheep in the Bluebell and Goshute Peak WSAs would be the same as the Resource Production Alternative.

The habitat of sharp-tailed grouse in the O'Neil/Salmon Falls and Goose Creek RCAs would be improved over the long-term as native range condition is improved. These are significant beneficial impacts in these RCAs.

Impacts to bald eagles would be the same as the No Action Alternative.

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

The combined management actions of improved livestock management practices and protection, enhancement, and/or development of 150 springs would improve terrestrial riparian habitat by one condition class on 50 percent of those acres in good, fair, or poor condition. About 25 percent of those acres in fair or better condition are expected to remain static because of their physical location which limits livestock impacts. About 50 percent of those acres in poor condition would remain so and 25 percent of those in fair or better condition would decline by one condition class. These are in areas where improvements are not proposed. Both the beneficial and adverse impacts are significant in all the RCAs and the resource area in the

short-term. The overall impacts of this alternative are beneficial as they are expected to outweigh the adverse impacts.

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 class.

The management actions for livestock grazing and terrestrial wildlife and riparian habitat would combine to generally improve wildlife habitat condition and result in reasonable numbers being met over the long-term. The projected long-term trend of known condition (in acres) of crucial and noncrucial big game (deer and antelope) habitats are shown in Tables 4-7 and 4-8.

About 50 percent of all existing habitats would improve one condition class in all RCAs and the resource area as a whole and more than 50 percent of the known habitat condition would be in fair or better condition. These are expected to result in reasonable numbers and significant long-term beneficial impacts would occur. The condition of those acres which would remain in their current condition class could improve, decline, or remain static within that class.

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

Impacts to fence hazards on crucial big game habitat would be the same as the Resource Production Alternative.

The modification of 175 miles or about 50 percent of the fence hazards within noncrucial big game habitat is a short and long-term significant beneficial impact.

The protection, enhancement, and/or development of 150 spring sources or about 20 percent would be beneficial but not significant in the short and long-term.

ISSUE 9: RIPARIAN/STREAM HABITAT

1. About 95 miles of protected stream (in addition to those miles protected without action) and 2,518 acres of streamside riparian habitat would be maintained in a good or better condition class.

Same impacts as the Resource Production Alternative but on more miles of stream and acres of streamside riparian habitat.

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

Same impacts as the Resource Production Alternative but on fewer miles of stream and fewer acres of streamside riparian habitat.

About 362 miles, or 79 percent of the miles of stream and 8,903 acres, or 78 percent of the areas of streamside riparian habitat would continue to decline in overal habitat condition in the long-term. The projected short and long-term significant adverse impacts of this alternative are displayed by RCA in Tables 4-9 and 4-10.

Since no increase in livestock numbers are anticipated, no change in the rate of riparian damage is expected.

ISSUE 10: WOODLAND PRODUCTS

1. Woodland product harvest levels would increase.

Same impacts as the Resource Production Alternative except that only fuelwood harvest would increase by more than ten percent in the long-term.

Impacts on Christmas tree harvest in WSAs would be similar to the Resource Production Alternative except that the following listing displays the number of Christmas trees that could be cut yearly on a sustained yield basis by commercial and private interests in these areas.

WSA	Christmas Trees
Bluebell	100
Goshute Peak	0
South Pequop	0
TOTAL	100

The increased harvest of these trees is

TABLE 4-7

PROJECTED CRUCIAL WILDLIFE HABITAT CONDITION

RCA	Excellent	Good	Fair	Poor
Cherry Creek	8,700	17,400	35,550	26,850
Spruce/Goshutes	0	32,400	47,700	15,300
Mary's River	———	Unknown	———	———
O'Neil/Salmon Falls	15,500	15,500	20,400	20,400
Goose Creek	0	0	0	0
Pilot/Crittenden	0	0	0	0
Metropolis	———	Unknown	———	———
Ruby/Wood Hills	0	0	13,950	13,950
TOTAL	24,200	65,300	117,600	76,500

TABLE 4-8

PROJECTED NONCRUCIAL WILDLIFE HABITAT CONDITION

Cherry Creek	13,700	34,700	50,150	29,150
Spruce/Goshutes	3,450	81,900	423,100	344,650
Mary's River	0	74,400	74,400	0
O'Neil/Salmon Falls	11,750	23,400	29,100	17,450
Goose Creek	0	31,050	70,150	39,100
Pilot/Crittenden	6,750	6,750	0	0
Metropolis	0	0	12,450	12,450
Ruby/Wood Hills	0	0	41,400	41,400
TOTAL	35,650	252,200	700,750	484,200

insignificant in the short and long-term to both commercial and private interests.

2. Intensive management of woodland products would occur.

Impacts would be the same as the Resource Production Alternative with these exceptions. Limiting the crown canopy removal to 50 percent through selective cutting practices would increase growth rates and overall tree vigor in residual trees through the reduction of competition. Prime Christmas trees and/or rare district tree species could be destroyed by chaining or burning if these areas are not properly coordinated and planned. Managing deteriorating aspen stands would promote regeneration and vigor, thus preserving these important communities.

TABLE 4-9

STREAMSIDE RIPARIAN HABITAT CONDITION IN ACRES BY RCA

MIDRANGE ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		89.2 (81.6)	15.4 (2.6)	56.5 (76.9)		161.1
Spruce/Goshutes	12.8 (3.2)	19.2 (3.2)	 (25.6)			32.0
Mary's River		625.3 (535.1)	439.1 (94.6)	1049.8 (1484.5)		2114.2
O'Neil/Salmon Falls	115.2 (28.8)	2312.1 (1992.3)	809.2 (403.3)	5635.9 (6448.0)	Approx. 30	8902.4
Goose Creek		29.0 (29.0)		79.8 (79.8)		108.8
Pilot/Crittenden						
Metropolis			7.7 (1.9)	94.7 (100.5)		102.4
Ruby/Wood Hills						
TOTAL ACRES	128.0 (32.0)	3074.8 (2641.2)	1271.4 (528.0)	6916.7 (8189.7)	Approx. 30	11420.9

Source: Values for this table were derived from base data shown in Chapter 3.

TABLE 4-10

AQUATIC HABITAT CONDITION IN MILES BY RCA

MIDRANGE ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		10.0 (10.0)		11.7 (11.7)		21.7
Spruce/Goshutes	0.8 (0.2)	1.3 (0.2)	 (1.7)			2.1
Mary's River		29.0 (26.9)	4.2 (0.7)	89.3 (94.9)		122.5
O'Neil/Salmon Falls	8.7 (2.2)	77.1 (59.6)	39.5 (26.3)	124.0 (161.2)	Approx. 5	254.3
Goose Creek		4.4 (4.4)	11.0 (2.7)	30.3 (38.6)		45.7
Pilot/Crittenden						
Metropolis			1.2 (0.3)	9.7 (10.6)		10.9
Ruby/Wood Hills						
TOTAL MILES	9.5 (2.4)	121.8 (101.1)	55.9 (31.7)	265.0 (317.0)	Approx. 5	457.2

Source: Values for this table were derived from base data shown in Chapter 3.

Impacts to woodland products due to access would be the same as the No Action Alternative.

IMPACTS ON MINERALS

1. Mineral development would be adversely impacted because of wilderness designation.

The following listing shows the acres having good or high mineral potential within the portions of the four WSAs recommended as suitable for wilderness designation.

MINERAL POTENTIAL (ACRES)

WSA	High	Good
Bluebell	0	3,850
Goshute Peak	0	3,400
South Pequop	0	14,100
Bad Lands	0	400
TOTAL	0	21,750

A significant long-term adverse impact to mining activities would occur in the Spruce/Goshutes RCA. A total of 21,350 acres in this RCA (5.5 percent of lands in the RCA with good or high mineral potential) would be segregated from mineral entry. This impact is also significant resource area wide in that 2.4 percent of the lands having good or high mineral potential would be segregated from mineral entry.

The segregation from mineral entry of 400 acres with good mineral potential in the O'Neil/Salmon Falls RCA is an insignificant long-term adverse impact to mining activities. It represents only about 0.2 percent of the lands in the RCA with good or better mineral potential.

2. Mineral development would be limited because of time of year restrictions to protect terrestrial wildlife habitat.

Impacts would be nearly the same as those of the No Action Alternative.

3. No adverse impact would occur from segregation of the Ruby Marsh Campground.

Impacts would be the same as the Resource Production Alternative.

ECONOMIC IMPACTS

Recreation and Wildlife

Increased wildlife populations in the long-term would result in more hunter days and an increase in expenditures, income, and employment. Other recreational activities such as camping, picnicking, and floatboating would also increase as a result of expected population increases. Fishing, however, is expected to decrease because of the overall deterioration of aquatic habitat. The long-term increase in expenditures associated with these visitor changes would be $589,000 per year. The change would cause a total increase in income to Elko County of $174,400 per year. The increase in direct and indirect employment would be about 24 persons.

These would all be significant long-term beneficial impacts to the recreation sector since they represent about a 30 percent increase.

Wilderness

The following listing shows the long-term annual visitor days and associated benefits of the four WSAs.

WSA	Visitor Days	Visitor Days Benefits
Bluebell	1,500	$15,000
Goshute Peak	3,000	30,000
South Pequop	1,000	10,000
Bad Lands	2,000	20,000
TOTAL	7,500	$75,000

These benefits are about a $57,500 yearly increase over the current situation and are insignificant to the recreation sector.

Livestock Grazing

Although no increase in livestock AUMs is proposed in this alternative, some long-term projections of increased AUMs were made for comparative purposes. Given these projections, the long-term percentage change of gross livestock sales and net ranch income by ranch size/type are shown below.

Ranch Size/ Type	Gross Livestock Sales	Net Ranch Income
Small	+5.0	-6.0
Medium	+2.1	+16.1
Medium/Large	+3.5	-11.1
Large	+2.2	+ 3.6
Sheep	+4.3	+ 4.2

The changes in gross livestock sales would be significant long-term beneficial impacts to only the small ranch size groups whereas the changes in net ranch income would be significant to the small, medium, and medium/large ranch size groups.

Cumulative impacts on the livestock industry would increase the resource area herd size by about 945 cows and 3,830 sheep. The corresponding increase in gross livestock sales would be $451,600 per year or 2.8 percent. The increase in net ranch income would be $206,800 annually. This would result in an increase of agricultural

employment of ten persons, which is about three percent of the 1980 ranching industry employment in the Wells RA. These would be insignificant beneficial impacts to the livestock industry as a whole. The following listing displays these cumulative impacts by RCA.

RCA	Increase in Gross Livestock Sales	Increase in Net Ranch Income
Cherry Creek	$ 19,019	$ 2,565
Spruce/Goshutes	179,363	86,201
Mary's River	86,448	42,624
O'Neil/Salmon Falls	81,419	44,252
Goose Creek	37,154	10,777
Pilot/Crittenden	24,412	12,033
Metropolis	8,230	4,526
Ruby/Wood Hills	15,555	3,822
TOTAL	$451,600	$206,800

The projected AUM increases for each RCA would be relatively small as compared to the total gross sales and net income within each RCA. Individual ranchers should not be significantly impacted.

Wild Horses

Impacts would be the same as for those of the No Action Alternative.

Woodland Products

The following listing compares the current market value of woodland products harvested with that of this alternative in the long-term.

Woodland Product	MARKET VALUE (1980 DOLLARS) Existing Situation	Midrange
Fuelwood	$ 47,400	$160,000
Posts	$ 20,600	15,075
Christmas trees	181,440	84,000
TOTAL	$249,440	$259,075

Construction Sector

Implementation of this alternative would involve improvements for recreation, livestock, wild horses, wildlife, and riparian rehabilitation. Total cost is estimated at $3,149,950 (see Table 2-7). It is estimated that approximately 25 percent of this construction would be awarded to construction firms within the RA or within the City of Elko.

These improvements would be completed in a seven year period. If construction activity is distributed evenly throughout the period, additional revenue of approximately $112,500 per year (in 1980 dollars) would accrue to local construction firms. This increase in revenue would produce additional personal income to owners and employees of local construction firms of about $45,800 per year. This additional income could provide employment for about 22 additional county construction workers or 3.3 percent of that labor force. About eight other service oriented jobs would be generated. Therefore, an increase of 31 jobs or 1.7 percent increase in the total Wells RA employment would result. The increase in personal income and employment would not be significant to the construction sector, nor to the total resource area economy.

IMPACTS ON SOCIAL VALUES

Lands

Impacts would be the same as the Resource Production Alternative except to a lesser degree.

Corridors

The general public would be expected to support this alternative as it would identify and/or designate a number of corridors considered reasonable. Although the needs of utility and transportation companies would be met, their options would be reduced from those of the Resource Production Alternative.

Access

This alternative should be supported by all concerned, as it emphasizes access for all resources.

Recreation

This alternative would be well received for the most part by the general public. In the social analysis, some 50 percent of those interviewed offered suggestions regarding lands that have possible recreational potential. Recreational development is emphasized under this alternative and, thus, would satisfy the desire of the general public.

Wilderness

Impacts would be the same as those of the Resource Production Alternative except that more lands are recommended as suitable for wilderness designation.

Livestock Grazing

This alternative would depend on future monitoring of vegetation to define the exact degree of livestock adjustments needed. Ranchers will undoubtedly have mixed feelings concerning this alternative. All ranchers interviewed thought that the range was in an improving condition. If future monitoring differs from this thinking, then ranchers will be dismayed and will be adamant about the possibility of future grazing reductions.

Wild Horses

Impacts would be the same as those of the No Action Alternative.

Terrestrial Wildlife Habitat

Local, State and national wildlife interests and local and state sportsmen's groups would favor this over the Resource Production Alternative but not as much as the Resource Protection Alternative. About 26 percent of those interviewed felt that big game numbers in the Wells RA had declined over the past several years. With native range improving in the long-run, numbers of wildlife should be improved thus satisfying the needs and desires of hunters in the area.

Riparian/Stream Habitat

The impacts of this alternative would be the same as those of the Resource Production Alternative except that more miles of stream and acres of riparian habitat would be improved.

Woodland Products

The general public would favor this alternative as it emphasizes woodland product management for both the general public and commercial users. Most persons desire some green fuelwood cutting areas with sustained yield management since they realize the woodland product resource in Nevada is limited.

Minerals

Impacts pertaining to wilderness designation would be the same as those of the Resource Production Alternative except that more acres of wilderness would be recommended as suitable.

Impacts pertaining to access would be the same as those of the Resource Production Alternative.

OVERALL SUMMARY OF IMPACTS

The impacts of this alternative in the RCAs and the resource area are summarized in Table 4-11.

TABLE 4-11

IMPACTS OF THE MIDRANGE ALTERNATIVE

ISSUE/Impact	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Land values could decrease	NA	Land values in West Wendover could decrease (SA).	NA	Land values in Jackpot could decrease (SA).	NA	Land values in Montello & Pilot Valley could not decrease (NS)	Land values in Wells could decrease (SA)	Land values in Wells & Clover Valley could decrease (SA).	Land values could decrease, but in lesser degree than the Resource Production Alternative. (SA).
CORRIDORS: Utility & transportation companies would benefit.	Corridor designations and identifications would provide more than adequate opportunities for long range planning by utility and transportation companies (SB).				NA	Corridor designations and identifications would provide more than adequate opportunities for long range planning by utility and transportation companies (SB).			
Designation or identification of corridors would impact:	NS	Bald eagles (SA) Wilderness character within the northern portion of the South Pequop & the southern portion of the Goshute Peak WSAs (SA).	NA	Visual quality (SA)	NA	Visual quality (SA) ------>	Bald eagles (SA)	NS	SA
ACCESS: Public access easements would be acquired	NA	Public access easements would be acquired for access routes important for the public use and BLM administration of all resources.							
		11	4	10	2	3	4	1	35 Roads (SB)
		40	5	29	4	19	34	7	138 Miles (SB)
Public access would not be lost	NA	Public access through routes important for any of the resources would not be lost (SB) ---------->							
RECREATION: Recreation opportunities would be enhanced or degraded.	The quality of opportunities for hunting, fishing, and wildlife observation would slightly improve (SB). Mule deer hunting would be increased by about 35 percent (SB) and general recreation visitor day use would increase (SB).								
		Camping & picnicking enhanced at Tabor Cr. increase 800 visitor days (SB). Camping & fishing degraded along Mary's River (SA).		Floatboating enhanced on Salmon Falls Cr. Increase 200 visitor days (SB).		Fishing enhanced at Crittenden Reservoir. Increase 300 angler days (SB).		Camping enhanced at Ruby Marsh Campground. Increase 7900 visitor days (SB).	
ORV use would be adverseiy impacted	No ORV limitations or restrictions on more than 99 percent of the resource area (NS) ---------->							160 acres limited (NS)	160 acres limited (NS)
WILDERNESS: Wilderness preservation	NA	3 Areas, 151,466 Acres (SB)	NA	1 Area, 8415 Acres (SB)	NA	NA	NA	NA	4 Areas, 159,881 Acres (SB)
Loss of wilderness character	NA	3 WSAs, 15,059 Acres (SA)	NA	1 WSA, 1011 Acres	NA	NA	NA	NA	4 WSAs, 16,070 Acres (SA)
LIVESTOCK GRAZING: Licensed use	Livestock use would continue at the three to five year licensed use level (NS) ---------->								
Native range condition	Native range condition would improve (SB) ---------->						Native range condition would improve (NS).		Native range condition would improve (SB).
Livestock management problems as result of land disposal.	The potential probiems that a permittee could experience if lands that he or she grazes under permit were acquired by someone else would be less than the Resource Production Alternative but more than the No Action Alternative (SA).								
	NA	SA	NA	SA	NA	SA	SA	SA	SA
Added cost to permittees by wilderness preservation	NA	36 total hours of added labor per year to 3 permittees (NS)	NA	0 hours of added labor (NS)	NA	NA	NA	NA	16 total hours of added labor per year to 3 permittees (NS)
Loss of livestock grazing during riparian improvement	26 AUMs 0.18% (NS)	NA	168 AUMs 0.37% (NS)	635 AUMs 0.89% (NS)	10 AUMs 0.04% (NS)	NA	0 AUMs (NS)	NA	839 AUMs 0.29% (NS)
WILD HORSES: Horse numbers	No change (NS) ---------->		NA	NA	NA	NA	NA	NA	No change (NS)
Free roaming nature	Newly built fences would impede free roaming nature of all 6 herds (SA).		NA	NA	NA	NA	NA	NA	Fences would impede free roaming nature (SA)
Condition of wiid horses	Water developments would improve condition of wiid horses (SB).		NA	NA	NA	NA	NA	NA	Condition would improve (SB)
TERRESTRIAL WILDLIFE HABITAT: Opportunity to reintroduce native species enhanced	NA	ACEC designation would enhance reintroduction of peregrine falcon (SB). Even with wilderness designation, potential confiicts w/ domestic sheep impair reintroduction of bighorn sheep (SA).	Peregrine falcon habitat would be maintained (NS).	Wilderness designation would enhance reintoduction of bighorn sheep (SB).	NA	Peregrine falcon habitat would be maintained (NS).	NA	NA	Opportunity to reintroduce peregrine falcon & bighorn sheep would be enhanced (SB).
Terrestriai riparian habitat condition	Terrestrial riparian habitat would improve by one condition class on 50 percent of those acres in good, fair, or poor condition (SB). About 50 percent of those acres in poor condition would remain so while 25 percent of those in fair or better condition would decline one condition class (SA).								
Big game habitat condition	About 50 percent of all existing habitats would improve one condition class (SB) ---------->								
Identified wildiife hazards or habitat conflicts	About 80 percent of existing fence hazards in crucial and 50 percent in noncrucial big game habitats would be corrected (SB). About 20 percent of the conflicts near springs and meadows would be corrected (NS).								
RIPARIAN/STREAM HABITAT: Miles & acres in good or better condition	10	1	27	61	5	NA	0	NA	104 Miles (SB)
	82	6	535	2021	29		0		2673 Acres (SB)
	SB	SB	SB	SB	SB		SA		
Miles & acres in less than good condition	12	2	95	192	41	NA	11	NA	353 Miles (SA)
	80	26	1579	6881	80		102		8748 Acres (SA)
	SA	SA	SA	SA	SA		SA		
WOODLAND PRODUCTS: Harvest levels of	Fuelwood would increase (SB)	Fuelwood would increase (SB). Christmas tree harvest would not change w/ wilderness designation (NS).	NA	NA	Fuelwood would increase (SB)	Fuelwood would increase (SB)	NA	Fuelwood would increase (SB)	Harvest levels of fuelwood would increase by more than 10% (SB).
Intensive management of	Christmas trees & fuelwood (SB)		NA	NA	Fuelwood (SB)	Christmas trees & fuelwood (SB)	NA	Christmas trees & fuelwood (SB)	
MINERALS: Restricted mineral development because of wiiderness designation	NA	21,350 acres having good mineral potential recommended as suitable for wilderness (SA).	NA	400 acres having good mineral potential recommended as suitable for wiiderness (NS).	NA	NA	NA	NA	21,750 acres having good mineral potential recommended as suitable for wilderness (SA).
Acres where time of year restrictions would siow oii/gas & geothermal development	NS	NS	NS	170,800 acres (25%) for sage grouse (SA)	42,200 acres (20%) for sage grouse (SA)	NS	NS	56,300 acres (17%) for sage grouse (SA)	NS

NS = No significant Impact; NA = Not applicable; SB = Significant Beneficial Impact; and SA = Significant Adverse Impact

RESOURCE PROTECTION

ALTERNATIVE

ISSUE 1: LANDS

1. Land values may decrease.

The sale of up to 10,885 acres of public land in either the short or long-term could have similar significant adverse impacts as the Resource Production and Midrange Alternatives but of a lesser magnitude.

ISSUE 2: CORRIDORS

1. Utility and transportation companies would benefit from long range planning.

The designation or identification of 335 miles of utility and transportation corridors, including one major route for the proposed White Pine and Thousand Springs power projects, would provide minimal opportunities for utility and transportation companies to plan facilities. These impacts are significantly beneficial in the short and long-term, but to a lesser degree than the Resource Production Alternative.

2. Resource values would be degraded.

Designation and/or identification of 335 miles of corridors is expected to have significant short and long-term adverse impacts to visual quality, wilderness character, and wildlife habitat. These resources would be affected because of the locations of some of the corridors. Impacts are generally fewer than in the Midrange Alternative.

Corridor segments G-F and I-U-B on Map 2-11 would cause significant visual impairment.

Bald eagles would be adversely impacted from increased shooting deaths as a result of powerline placement near highways on segment O-P. Wintering bald eagles would be adversely impacted if construction took place from November 1 to March 31 on segment I-U.

Corridor segment O-XX-P would be within the southeastern portion of the Goshute Peak WSA. The location of a powerline, railroad and/or other transportation routes in this area would not only greatly impair the experience of solitude and primitive recreation but would also cause the loss of naturalness in the area.

ISSUE 3: ACCESS

1. Public access easement through important access routes would be acquired.

This alternative would emphasize acquisition of easements important for public use and BLM administration of recreation, wilderness areas, wild horses, and terrestrial and riparian habitats. Therefore, the aquisition of public access easement on 29 roads (95 miles) would have significant beneficial impacts to these resources in the long-term.

2. Public access through important access routes would be lost.

This alternative would not emphasize acquisition of easements important for public use and BLM administration of livestock grazing, woodland products, and minerals. Therefore, a significant adverse impact to these resources is expected in the long-term as access across six roads (43 miles) is lost.

ISSUE 4: RECREATION

1. Recreation opportunities available would be enhanced or degraded.

Impacts at Ruby Marsh Campground and Salmon Falls Creek would be the same as those of the Resource Production Alternative.

Impacts at Tabor Creek Recreation Area, Crittenden Reservoir, and along Mary's River would be the same as the No Action Alternative.

The improvement of stream and riparian corridors would greatly enhance opportunities for hunting, fishing, and wildlife observation in those specific areas. These significant beneficial short and long-term impacts would outweigh the significant adverse long-term impacts on those unimproved privately owned stream segments.

In most of the resource area opportunties for hunting, fishing, and wildlife observation would be enhanced as aquatic, riparian, and big game habitats are greatly improved. Initial impacts on wildlife populations would be negligible. However, in the long run, there would be an increase in populations of antelope, sage grouse, and mule deer. These changes would result in an increase in hunter days overall. Hunter days for mule deer are estimated to increase by about 50 percent resource area wide from 11,725 to 17,587 annually. This is a significant beneficial long-term impact.

2. ORV use would be adversely impacted.

ORV use on about 160 acres at the Ruby Marsh Campground and 1,650 acres along Salmon Falls Creek would be limited to designated roads and trails. Since more than 99 percent of the resource area would remain open to ORV use without limitations or restrictions there would be no significant impact in the short or long-term.

ISSUE 5: WILDERNESS

1. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be preserved on most of the 175,951 WSA acres.

WSA	Suitable Acres	Nonsuitable Acres
Bluebell	55,665	0
Goshute Peak	69,770	0
South Pequop	41,090	0
Bad Lands	9,426	0
TOTAL	175,951	0

Impacts would be the same as the Midrange Alternative except that 16,070 acres are considered unmanageable as wilderness over the long-term. The following listing displays these portions by WSA.

WSA	Unmanageable Acres
Bluebell	7,357
Goshute Peak	4,185
South Peqoup	3,517
Bad Lands	1,011
TOTAL	16,070

To maintain compliance with wilderness management on these lands would require an intensive Bureau presence and would degrade the wilderness experience on these areas.

2. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be lost on 16,070 acres.

Impacts would be same as those of the Midrange Alternative because wilderness character would be lost on the 16,070 unmanageable acres over the long-term.

ISSUE 6: LIVESTOCK GRAZING

1. Present licensed use would decrease.

This alternative would reduce AUMs from the three to five year licensed use of 288,934 AUMs by 112,723 to a level of 176,211. This would be 39 percent below three to five year licensed use and 54 percent below preference. Reductions proposed by RCA are as follows: Cherry Creek (3,157 AUMs, 27.3%); Spruce/Goshutes (25,407 AUMs, 51.8%);

Mary's River (11,287 AUMs, 24.8%); O'Neil/Salmon Falls (47,028 AUMs, 65.7%); Goose Creek (3,338 AUMs, 14.4%); Pilot/Crittenden (12,507 AUMs, 41.5%); Metropolis (8,578 AUMs, 20.1%); and Ruby/Wood Hills (1,423 AUMs, 9.3%). These reductions would be short and long-term significant adverse impacts to livestock grazing in the resource area and in all RCAs except Ruby/Wood Hills.

2. Native range condition would improve.

Native range condition would improve significantly on those areas excluded from livestock use for the protection of essential and crucial wildlife habitats. Livestock would continue to graze at the current level outside the exclusion areas but without the benefit of seedings to supplement spring feed. There would still be an improvement in range condition on those areas left open for livestock use through improved management practices but not to a significant extent.

3. Livestock management problems would occur as result of land disposals.

Impacts would be the same as those of the No Action Alternative but of larger magnitude as the potential exists for disposal of 10,385 acres.

4. Added costs to livestock operators would occur because of wilderness designations.

Impacts would be the same as those explained in the Resource Production Alternative except that the following listing shows the additional yearly hours of labor needed in affected allotments.

WSA	Allotment	Hours
Bluebell	Big Springs	8
Goshute Peak	Spruce	8
South Pequop	Spruce	4
Bad Lands	---	0
TOTAL		20

These impacts would not be significant to the affected operators or the livestock industry as a whole.

5. Loss of livestock grazing would occur during riparian improvement.

Livestock forage in riparian zones would be excluded from grazing during improvement. About 5,935 acres, or less than one percent of the Wells RA, would be involved. Many of the areas are producing only a fraction of their potential at present. The loss would amount to 1978 AUMs or about 0.52 percent resource area wide. This would be an insignificant impact, particularly when considering the long-term benefits of increased forage production that improvement would offer.

ISSUE 7: WILD HORSES

1. Wild horse herd numbers would be increased by 100 percent in all herd areas. The free roaming nature of wild horses would not be affected.

The proposed 100 percent increase in wild horse numbers in all six herd areas is a significant beneficial short and long-term impact to wild horses.

Impacts to the free roaming nature of wild horses would be the same as those of the No Action Alternative because new fences would not be constructed in the herd areas.

2. The condition of wild horses would improve.

The impacts would be the same as those of the Midrange Alternative except that a 100 percent increase in wild horse numbers would occur.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. The opportunity for reintroduction of native wildlife species would be enhanced or maintained while wintering bald eagle habitat would be slightly improved.

Impacts to peregrine falcon habitat in the Spruce/Goshutes RCA would be the same as the Midrange Alternative except that a 16,200 acre ACEC would provide greater protection of peregrine falcon habitat.

Impacts to peregrine falcon habitat in the Mary's River and Pilot/Crittenden RCAs would be the same as the Midrange Alternative.

Impacts to bighorn sheep reintroduction in the Bad Lands WSA are the same as the Midrange Alternative. Impacts to their reintroduction in the Bluebell and Goshute Peak WSAs would be the same as the Resource Production Alternative except that this alternative would essentially eliminate the concerns with domestic sheep as livestock reductions occur. These are significant beneficial short and long-term impacts.

Impacts to bighorn sheep reintroduction on Pilot Peak and in the portion of the O'Neil/Salmon Falls RCA outside the Bad Lands WSA are the same as the Midrange Alternative.

The habitats of elk and sharp-tailed grouse would be beneficially impacted as in the Midrange Alternative but in greater magnitude because of livestock reductions.

The reductions in livestock would, over time, improve the native range condition. This would reduce the bald eagles primary prey (the Black-tailed jackrabbit) thereby impairing the quality of bald eagle habitat. However, since other management actions to improve bald eagle habitat would slightly outweigh this adverse impact, a significant beneficial impact to bald eagles would occur overall.

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

Impacts would be similar to those of the Midrange Alternative except of greater magnitude because of protection, enhancement, and/or development of 250 springs, and improved livestock management. About 75 percent of those habitats in good, fair, or poor condition would improve by one condition class. About 15 percent of those acres in fair or better condition would remain static and about ten percent of those in fair or better would decline by one condition class. The beneficial impacts are significant whereas the adverse impacts are not.

The 39 percent reduction in livestock grazing use would not benefit terrestrial riparian habitat because these habitats are the first to be impacted at any grazing level.

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.

Impacts would be the same as those of the Midrange Alternative except that a 39 percent reduction in livestock AUMs would combine with the terrestrial wildlife and riparian improvement management actions to greatly improve wildlife habitat condition and result in reasonable numbers being met over the long-term. The projected long-term trend of known condition (in acres) of crucial and noncrucial big game (deer and antelope) habitats are shown in Tables 4-12 and 4-13.

About 75 percent of all existing habitats would improve one condition class in all RCAs and the resource area as a whole and more than 50 percent of the known habitat condition would be in fair or better condition. These are expected to result in reasonable numbers and significant long-term beneficial impacts would occur. The condition of those acres which would remain in their current condition class would improve, decline, or remain static.

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

Management actions to correct fencing hazards on both crucial and noncrucial big game habitats would be the same as those of the Midrange Alternative. However, since this alternative includes a 39 percent overall reduction in livestock AUMs, correcting or eliminating the same number of conflicts as the Midrange Alternative would maximize benefits to wildlife. This alternative would also protect, enhance, and/or develop 250 spring sources or about 35 percent. These impacts are significant short and long-term beneficial impacts.

ISSUE 9: RIPARIAN/STREAM HABITAT

1. About 220 miles of protected stream (in addition to those miles protected without action) and 5930 acres of streamside riparian habitat would be maintained in a good or better condition class.

The impacts would be similar to the Resource

TABLE 4-12

PROJECTED CRUCIAL WILDLIFE HABITAT CONDITION

RCA	Excellent	Good	Fair	Poor
Cherry Creek	13,050	17,400	44,625	13,425
Spruce/Goshutes	0	48,600	39,150	7,650
Mary's River	———	Unknown	Unknown	———
O'Neil/Salmon Falls	23,250	7,750	30,600	10,200
Goose Creek	0	0	0	0
Pilot/Crittenden	0	0	0	0
Metropolis	———	Unknown	Unknown	———
Ruby/Wood Hills	0	0	20,925	6,975
TOTAL	36,300	73,750	135,300	38,250

TABLE 4-13

PROJECTED NONCRUCIAL WILDLIFE HABITAT CONDITION

RCA	Excellent	Good	Fair	Poor
Cherry Creek	20,550	38,350	54,225	14,575
Spruce/Goshutes	5,175	119,400	556,200	172,325
Mary's River	0	111,600	37,200	0
O'Neil/Salmon Falls	17,625	23,350	30,250	10,475
Goose Creek	0	46,575	74,175	19,550
Pilot/Crittenden	10,125	3,375	0	0
Metropolis	0	0	18,675	6,225
Ruby/Wood Hills	0	0	62,100	20,700
TOTAL	53,475	342,650	832,825	243,850

Production Alternative but on more miles of stream and more acres of streamside riparian habitat.

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

The impacts would be similar to the Resource Production Alternative but on fewer miles of stream and streamside riparian acres.

Under this alternative 237 miles, or 52 percent of the miles of stream and 5,491 acres, or 48 percent of the acres of streamside riparian habitat would continue to decline in overall habitat condition in the long-term. The projected short and long-term significant adverse impacts of this alternative are displayed by RCA in Tables 4-14 and 4-15.

Under this alternative the proposed reductions in livestock AUMs are not expected to significantly reduce impacts to riparian communities.

TABLE 4-14

STREAMSIDE RIPARIAN HABITAT CONDITION IN ACRES BY RCA

RESOURCE PROTECTION ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		93.8 (86.2)	15.4 (2.6)	51.9 (72.3)		161.1
Spruce/Goshutes	6.2 (1.5)	25.8 (18.2)	 (12.3)			32.0
Mary's River		1217.6 (1127.4)	439.1 (94.6)	457.5 (892.2)		2114.2
O'Neil/Salmon Falls	115.2 (28.8)	5027.0 (4707.4)	809.2 (403.3)	2921.0 (3732.9)	Approx. 30	8902.4
Goose Creek		56.5 (56.5)		52.3 (52.3)		108.8
Pilot/Crittenden						
Metropolis		53.1 (53.1)	7.7 (1.9)	41.6 (47.4)		102.4
Ruby/Wood Hills						
TOTAL ACRES	121.4 (30.3)	6473.8 (6048.8)	1271.4 (514.7)	3524.3 (4797.1)	Approx. 30	11420.9

Source: Values for this table were derived from base data shown in Chapter 3.

TABLE 4-15

AQUATIC HABITAT CONDITION IN MILES BY RCA

RESOURCE PROTECTION ALTERNATIVE

Five Years From Present
(20 Years From Present)

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek		10.5 (10.5)		11.2 (11.2)		21.7
Spruce/Goshutes	0.4 (0.1)	1.7 (1.1)	 (0.9)			2.1
Mary's River		61.7 (59.6)	4.2 (0.7)	56.6 (62.2)		122.5
O'Neil/Salmon Falls	8.7 (2.2)	144.6 (126.9)	39.4 (26.2)	56.6 (94.0)	Approx. 5	254.3
Goose Creek		22.0 (22.0)	9.5 (2.8)	14.2 (20.9)		45.7
Pilot/Crittenden						
Metropolis		5.2 (5.2)	1.2 (0.3)	4.5 (5.4)		10.9
Ruby/Wood Hills						
TOTAL MILES	9.1 (2.3)	245.7 (225.3)	54.3 (30.9)	143.1 (193.7)	Approx. 5	457.2

Source: Values for this table were derived from base data shown in Chapter 3.

ISSUE 10: WOODLAND PRODUCTS

1. Woodland product harvest levels would increase.

Impacts would be the same as the Midrange Alternative except that no portions of the Bluebell, Goshute Peak, and South Pequop WSAs would become available for commercial or private Christmas tree harvest.

2. Intensive management of woodland products would occur.

Impacts would be the same as the Midrange Alternative with the exception that the crown canopy removal limit would be 75 percent. This would open the canopy to a greater extent and release desirable browse species.

Impacts to woodland products due to access would be the same as the No Action Alternative.

IMPACTS ON MINERALS

1. Mineral development would be adversely impacted because of wilderness designation.

The following listing shows the acres having good or high mineral potential within the portions of the four WSAs recommended as suitable for wilderness designation.

MINERAL POTENTIAL (ACRES)

WSA	High	Good
Bluebell	900	4,900
Goshute Peak	0	5,400
South Pequop	0	16,350
Bad Lands	0	500
TOTAL	900	27,150

A significant long-term adverse impact to mining activities would occur in the Spruce/Goshute RCA. A total of 27,550 acres in this RCA (7.1 percent of lands in the RCA with good or high mineral potential) would be segregated from mineral entry. This impact is also significant resource area wide in that three percent of the lands having good or high mineral potential would be segregated from mineral entry.

The segregation from mineral entry of 500 acres with good mineral potential in the O'Neil/Salmon Falls RCA is an insignificant long-term adverse impact to mining activities. It represents only about 0.3 percent of the lands in the RCA with good or better mineral potential.

2. Mineral development would be limited because of the time of year restrictions to protect terrestrial wildlife habitat.

Impacts would be the same as those of the No Action Alternative except that time of year restrictions would be placed on the acres and percentages of RCAs listed below to protect sage grouse strutting, nesting, and wintering habitats and all deer winter range. These are significant short and long-term adverse impacts.

SAGE GROUSE

RCA	Acres	% of RCA
Mary's River	64,300	15
O'Neil/Salmon Falls	171,500	25
Goose Creek	42,200	20
Ruby/Wood Hills	64,600	20

MULE DEER

Cheery Creek	70,300	19
O'Neil/Salmon Falls	125,600	18
Pilot/Crittenden	123,200	23

3. No adverse impact would occur from segregation of the Ruby Marsh Campground.

Impacts would be the same as the Resource Production Alternative.

ECONOMIC IMPACTS

Recreation and Wildlife

Increased wildlife populations and rehabitation of aquatic habitat would result in increased hunting and fishing in the long-term. Other recreational activities such as camping, picnicking, and floatboating would also increase. The long-term increase in expenditures associated with these visitor changes would be $908,200 per year. The change would cause a total increase in income to Elko County of $268,900. The increase in direct and indirect employment would be about 38 persons.

These would all be significant long-term beneficial impacts to the recreation sector since they represent about a 48 percent increase.

Wilderness

Impacts would be the same as those of the Midrange Alternative.

Livestock Grazing

The percentage long-term decrease of gross livestock sales and net ranch income by ranch size/type are shown below.

Ranch Size/ Type	Gross Livestock Sales	Net Ranch Income
Small	-16.4	- 4.4
Medium	- 7.1	-54.1
Medium/Large	-14.6	-20.1
Large	- 7.3	-12.2
Sheep	-14.3	-14.2

These changes would be significant long-term adverse impacts to all ranch size groups.

Cumulative impacts on the livestock industry would reduce the resource area herd size by 3,769 cows and 11,537 sheep. The corresponding decrease in gross livestock sales would be $1,651,300 annually or ten percent.

The decrease in net ranch income would be $799,800 annually. These would result in a decrease of agricultural employment of 40 persons or about 13 percent of the ranching employment in the Wells RA. These would be significant long-term adverse impacts. The following listing displays these cumulative impacts by RCA.

RCA	Decrease in Gross Livestock Sales	Decrease in Net Ranch Income
Cherry Creek	$ 27,027	$ 3,645
Spruce/Goshutes	847,987	407,490
Mary's River	135,075	66,600
O'Neil/Salmon Falls	413,358	224,664
Goose Creek	40,012	11,606
Pilot/Crittenden	58,876	29,069
Metropolis	82,300	45,260
Ruby/Wood Hills	46,665	11,466
TOTAL	$1,651,300	$799,800

Under this alternative all operators would be expected to experience economic hardships and some small operators may be forced out of business.

Wild Horses

With the approximate 100 percent increase in wild horse numbers there would be about a $65,435 increase in the value of forage that they consume annually. This would be an insignificant adverse impact to the ranching industry.

Woodland Products

Impacts would be the same as those of the Midrange Alternative.

Construction Sector

Implementation of this alternative would involve improvments for recreation, livestock, wild horses, wildlife, and riparian rehabilitation. Total cost is estimated at $3,732,150 (see Table 2-7). It is estimated that approximately 25 percent of this construction would be awarded to construction firms within the Wells RA or within the City of Elko.

These improvements would be completed in a seven year period. If construction activity is distributed evenly throughout the period, additional revenue of approximately $133,300 per year (in 1980 dollars) would accrue to local construction firms. This increase in revenue would produce additional personal income to owners and employees of local construction firms of about $54,000 per year. This additional income could provide employment for about 26 additional county construction workers or 3.9 percent of that labor force. About ten other service oriented jobs would be generated. Therefore, an increase of 36 jobs or 1.9 percent in the total Wells RA employment would result. The increase in personal income and employment would not be significant to the construction sector, nor to the total resource area economy.

IMPACTS ON SOCIAL VALUES

Lands

Impacts would be the same as those of the Resource Production Alternative but of lesser magnitude than the Midrange Alternative.

Corridors

This alternative would be supported by local, state and national conservation organizations in that it would designate and identify the least amount of corridors in the resource area. Although the needs of the utility and transportation companies would be met, their options would greatly be reduced from those of the Resource Production Alternative.

Access

This alternative would be highly favored by those persons with interests in recreation, wilderness, and resource protection. Those desiring access for livestock grazing, woodland products, and mining would not support this alternative.

Recreation

Impacts would be the same as the Midrange Alternative except that Tabor Creek would be managed as a Recreation Area of Management Concern.

Wilderness

Impacts would be the same as the Resource Production Alternative except that all of the WSA acres would be recommended as suitable for wilderness designation. This alternative would be the least favored by the local populace and the mining and ranching communities. It would be the most favored by local, state, and national conservation groups.

Livestock Grazing

Ranchers would be extremely displeased with the AUM reductions in this alternative. Ranchers would be severely impacted and some may be put out of business. Most ranchers come from generations of ranching and they feel that another way of life would be a difficult adjustment to make. This alternative would force reevaluation of the trade-offs between life style retention and further income reductions.

Wild Horses

This alternative would increase wild horse numbers substantially and alienate ranchers with allotments involved.

The nonranching community, including national wild horse advocate groups, feels that at least a small wild horse herd should be maintained. Some groups and persons would agree with the sizable increases in wild horse numbers proposed while others are aware of the ranching sentiment and would not favor such large increases in numbers.

Terrestrial Wildlife Habitat

Local, state, and national wildlife interests and sportsmen's groups would favor this alternative whereas livestock interests would oppose it.

Riparian/Stream Habitat

This alternative would be the most favored by the sportsmen's groups, professional fishery societies, and conservation organizations and the least favored by the ranching community.

Woodland Products

The general public would support this alternative but commercial users would oppose it.

Minerals

The mining community would not favor this alternative as it would recommend for wilderness designation the largest amount of acres and, thus, the potential opportunities foregone for mineral development are the greatest.

The emphasis on legal public access acquisitions would not be satisfactory to miners.

OVERALL SUMMARY OF IMPACTS

The impacts of this alternative in the RCAs and the resource area are summarized in Table 4-16.

TABLE 4-16

IMPACTS OF THE RESOURCE PROTECTION ALTERNATIVE

ISSUE/Impact	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Coose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Land values could decrease	NA	Land values in West Wendover could decrease (SA).	NA	Land values in Jackpot could decrease (SA).	NA	Land values in Montello & Pilot Valley could not decrease (NS)	Land values in Wells could decrease (SA).	Land values in Wells could decrease (SA) while those in Clover Vally could not (NS)	Land values could decrease, but in lesser degree than the Midrange Alternative (SA)
CORRIDORS: Utility & transportation companies would benefit.	Corridor designations and identifications would provide minimal opportunities for long range planning by utility and transportation companies (SB).				NA	Corridor designations and identifications would provide minimal opportunities for long range planning by utility and transportation companies (SB).			
Designation or identification of corridors would impact:	NS	Bald eagles (SA) Wilderness character within the southeastern portion of the Coshute Peak WSA (SA)	NS	Visual quality (SA)	NA	Visual quality (SA) -------→	Bald eagles (SA)	NS	SA
ACCESS: Public access easements would be acquired	NA	Public access easements would be acquired for access routes important for the public use and BLM adminlstration of recreation, wilderness areas, wild horses, and terrestrial wildlife and riparian habitats.							
		7	4	10	2	2	3	1	29 Roads (SB)
		17	5	29	4	3	30	7	95 Miles (SB)
Public acces would be lost	NA	Public access through access routes important for public use and BLM administration of livestock grazing, woodland products, or minerals would be lost.							
		4	0	0	0	1	1	0	6 Roads (SA)
		23	0	0	0	16	4	0	43 Miles (SA)
RECREATION: Recreation opportunities would be enhanced or degraded	The quality of opportunities for hunting, fishing, and wildlife observation would greatly improve (SB). Mule deer hunting would be increased by about 50 pereent (SB) and general recreation visitor day use would increase (SB).								
		Camping & picnicking degraded at Tabor Cr. (SA). Increase 400 visitor days (SB). Camping & fishing degraded along Mary's River (SA).		Floatboating enhanced on Salmon Falls Cr. Increase 200 visitor days (SB).		Fishing degraded at Crittenden Reservoir (SA).		Camping enhanced at Ruby Marsh Campground. Increase 7900 visitor days (SB).	
ORV use would be adversely impacted	No ORV limitations or restrictions on more than 99 percent of the resource area (NS).			1650 acres limited (NS)	No ORV limitations or restrictions on more than 99 percent of the resource area (NS).			160 acres limited (NS)	1810 acres limited (NS)
WILDERNESS: Wilderness preservation	NA	3 Areas, 166,525 Acres (SB)	NA	1 Area, 9426 Acres (SB)	NA	NA	NA	NA	4 Areas, 175,951 Acres
Loss of wilderness character	NA	3 WSAs, 15,059 Acres (SA)	NA	1 WSA, 1011 Acres (SA)	NA	NA	NA	NA	4 WSAs, 16,070 Acres (SA)
LIVESTOCK GRAZING: Licensed use decrease	3157 AUMs 27% (SA)	25,407 AUMs 52% (SA)	11,287 AUMs 25% (SA)	47,028 AUMs 66% (SA)	3338 AUMs 14% (SA)	12,507 AUMs 42% (SA)	8578 AUMs 20% (SA)	1423 AUMs 9% (NS)	112,725 AUMs 39% (SA)
Native range condition	Native range condition would improve dramatically on those areas excluded from livestock use (SB). Use levels would remain at current levels on areas designated for livestock grazing but range conditions would improve through better management although not significantly (NS).								
Livestock management problems as result of land disposal.	The potential problems that a permittee could experience if lands that he or she grazes under permit were acquired by someone else would be less than the Resource Production Alternative but more than the No Action Alternative (SA).								
	NA	SA	NA	SA	NA	SA	SA	SA	SA
Added cost to permittees by wilderness preservation	NA	20 total hours of added labor per year to 3 permittees (NS)	NA	0 hours of added labor (NS)	NA	NA	NA	NA	20 total hours of added labor per year to 3 permittees (NS)
Loss of livestock grazing during riparian improvement	28 AUMs 0.19% (NS)	NA	360 AUMs 0.66% (NS)	1554 AUMs 2.16% (NS)	19 AUMs 0.07% (NS)	NA	18 AUMs 0.04% (NS)	NA	1978 AUMs 0.52% (NS)
WILD HORSES: Horse numbers	100% increase (SB) -------→		NA	NA	NA	NA	NA	NA	100% increase in all herds (SB)
Free roaming nature	Newly built fences would impede free roaming nature of all 6 herds (SA).		NA	NA	NA	NA	NA	NA	Fences would impede free roaming nature (SA)
Condition of wild horses	Water developments would improve condition of wild horses (SB).		NA	NA	NA	NA	NA	NA	Condition would improve (SB)
TERRESTRIAL WILDLIFE HABITAT: Opportunity to reintroduce native species enhanced	NA	ACEC designation would enhance reintroduction of peregrine falcon (SB). Wilderness designation & livestock reductions would enhance reintroduction of bighorn sheep (SB).	Peregrine falcon habitat would be maintained (NS)	Wilderness designation would enhance reintroduction of bighorn sheep (SB).	NA	Peregrine falcon habitat would be maintained (NS).	NA	NA	Opportunity to reintroduce peregrine falcon & bighorn sheep would be enhanced (SB).
Terrestrial riparian habitat condition	Terrestrial riparian habitat would improve by one condition class on 75 percent of those habitats in good, fair, or poor condition (SB). About 10 percent of those in fair or better condition would decline one condition class (NS).								
Big game habitat condition	About 75 percent of all existing habitats would improve one condition class (SB) ----------→								
Identified wildlife hazards or habitat conflicts	About 80 percent of existing fence hazards in crucial and 50 percent in noncrucial big game habitats would be corrected (SB). About 35 percent of the conflicts near springs and meadows would be corrected (SB).								
RIPARIAN/STREAM HABITAT: Miles & acres in good or better condition	11	2	59	129	22	NA	5	NA	228 Miles (SB)
	86	20	1127	4735	57		54		6079 Acres (SB)
	SB	SB	SB	SB	SB		SB		
Miles & acres in less than good condition	11	1	63	124	24	NA	6	NA	229 Miles (SA)
	75	12	987	4167	52		49		5342 Acres (SA)
	SA	SA	SA	SA	SA		SA		
WOODLAND PRODUCTS: Harvest levels of	Fuelwood would increase (SB)	Fuelwood would increase (SB). Christmas tree harvest would not change w/ wilderness designation (NS).	NA	NA	Fuelwood would increase (SB)	Fuelwood would increase (SB)	NA	Fuelwood would not change (NS)	Harvest levels of fuelwood would increase by more than 10% (SB).
Intensive management of	Christmas trees & fuelwood (SB)		NA	NA	Fuelwood (SB)	Christmas trees & fuelwood (SB)	NA	Christmas trees & fuelwood (SB)	
MINERALS: Restricted mineral development because of wilderness designation	NA	27,550 acres having good or high mineral potential recommended as suitable for wilderness (SA).	NA	500 acres having good mineral potential recommended as suitable for wilderness (NS).	NA	NA	NA	NA	28,050 acres having good or high mineral potential recommended as suitable for wilderness (SA)
Acres where time of year restrictions would slow oil/gas & goethermal development	70,300 acres (19%) for mule deer (SA)	NS	64,300 acres (15%) for sage grouse (SA)	171,500 acres (25%) for sage grouse & 125,600 acres (18%) for mule deer (SA)	42,200 acres (20%) for sage grouse (SA)	123,200 acres (23%) for mule deer (SA)	NS	64,600 acres (20%) for sage grouse (SA)	NS

NS = No significant Impact; NA = Not applicable; SB = Significant Beneficial Impact; and SA = Significant Adverse Impact

PREFERRED

ALTERNATIVE

ISSUE 1: LANDS

1. Land values may decrease.

Impacts are the same as the Resource Production Alternative.

ISSUE 2: CORRIDORS

1. Utility and transportation companies would benefit from long range planning.

Impacts are the same as the Midrange Alternative.

2. Resource values would be degraded.

Same impacts as the Midrange Alternative except segment P-GG-Q on Map 2-9 would follow the route of the Resource Production Alternative. This would protect the wilderness values of the Goshute Peak WSA.

ISSUE 3: ACCESS

1. Public access easement through important access routes would be acquired.

Impacts are the same as the Midrange Alternative.

2. Public access through important access routes would not be lost.

Impacts are the same as the Midrange Alternative.

ISSUE 4: RECREATION

1. Recreation opportunities available would be enhanced.

Impacts at Ruby Marsh Campground, Tabor Creek Recreation Area, Salmon Falls Creek, and along Mary's River would be the same as those of the Resource Production Alternative.

Impacts at Crittenden Reservoir and impacts to hunting, fishing, and wildlife observation would be the same as those of the Midrange Alternative.

2. ORV use would be adversely impacted.

Impacts would be the same as the Midrange Alternative.

ISSUE 5: WILDERNESS

1. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be preserved on 159,881 acres.

Impacts would be the same as those of the Midrange Alternative.

2. Wilderness character and the opportunity to experience solitude and/or primitive and unconfined types of recreation in a natural setting would be lost on 16,070 acres.

Impacts would be the same as those of the No Action Alternative but on 16,070 acres.

ISSUE 6: LIVESTOCK GRAZING

1. Present licensed use would increase.

Grazing use in the short-term would be at preference level in the Metropolis and Ruby/Wood Hills RCAs (same as the Resource Production Alternative). Grazing use would remain at the three to five year use level in the other RCAs (same as the No Action and Midrange Alternatives). These are significant short and long-term beneficial impacts only in the Ruby/Wood Hills RCA.

2. Native range condition would improve.

Impacts to native range condition in the Metropolis and Ruby/Wood Hills RCAs would be the same as that of the Resource Production Alternative. Impacts to native range condition in the other six RCAs would be the same as that of the Midrange Alternative.

3. Livestock management problems would occur as result of land disposals.

Impacts would be the same as those of the Resource Production Alternative.

4. Added costs to livestock operators would occur because of wilderness designations.

Impacts would be the same as those of the Midrange Alternative.

5. Loss of livestock grazing would occur during riparian improvement.

Impacts would be the same as the Midrange Alternative.

ISSUE 7: WILD HORSES

1. Wild horse herd numbers would be allowed to range from 80 to 100 percent of present numbers. The free roaming nature of wild horses would be adversely impacted.

Impacts to wild horse herds would be the same as the No Action Alternative. However, their numbers would fluctuate between a level below and equal to 1981 levels. These are not significant impacts in either the short or long-term.

Impacts to the free roaming nature of wild horses would be the same as those of the Resource Production Alternative.

2. The condition of wild horses would improve.

Impacts would be the same as those of the Midrange Alternative.

ISSUE 8: TERRESTRIAL WILDLIFE HABITAT

1. The opportunity for reintroduction of native wildlife species would be enhanced or maintained while wintering bald eagle habitat would be maintained.

Impacts to peregrine falcon, elk, sharp-tailed grouse, and bald eagles would be the same as the Midrange Alternative.

Impacts to bighorn sheep reintroduction in the Bluebell and Goshute Peak WSAs and on Pilot Peak would be the same as the Midrange Alternative with the addition of further study to examine the potential conflicts with domestic sheep. These studies would center around possible diseases transmittable from domestic sheep and the effects of domestic livestock grazing on bighorn sheep populations. Also evaluated would be the effect of dense pinyon pine-juniper and mountain mahogany stands as well as the presence of wild horses on bighorn sheep. These impacts are considered significantly beneficial in the short and long-term.

Impacts to bighorn sheep reintroduction in the Bad Lands WSA would be the same as the Resource Protection Alternative except that the wilderness area boundary would be that of the Midrange Alternative. Impacts to bighorn sheep reintroduction in the portion of the O'Neil/Salmon Falls RCA outside the Bad Lands WSA are the same as the Midrange Alternative.

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

Impacts would be the same as those of the Resource Protection Alternative.

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.

Impacts would be similar to and of a magnitude between the Midrange and Resource Protection Alternatives. The impacts are expected to be closer to the Midrange Alternative as there would be no reductions in livestock AUMs proposed in this alternative. The projected long-term trend of known condition (in acres) of crucial and non-crucial big game (deer and antelope) habitats are shown in Tables 4-17 and 4-18.

About 60 percent of all existing habitats would improve one condition class in all RCAs and the resource area as a whole and more than 50 percent of the known habitat condition would be in fair or better condition. These are expected to result in reasonable numbers and significant long-term beneficial impacts would occur. The condition of those acres which would remain in their current condition class would improve, decline, or remain static within that class.

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

Impacts of fencing hazards on both crucial and noncrucial big game habitat would be the same as the Midrange Alternative. Impacts to the protection, enhancement, and/or development of spring sources would be the same as the Resource Protection Alternative. These are significant beneficial impacts in both the short and long-term.

ISSUE 9: RIPARIAN/STREAM HABITAT

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 a good or better condition class.

Impacts resulting from this alternative would be the same as those described under the Resource Production Alternative, but on the same amount of miles of stream and acres of streamside riparian habitat as in the Midrange Alternative.

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

Impacts would be the same as those described under the Resource Production Alternative, but on the same amount of miles of stream and acres of streamside riparian habitat as in the Midrange Alternative.

ISSUE 10: WOODLAND PRODUCTS

1. Woodland product harvest levels would increase.

Impacts would be the same as the Midrange Alternative.

2. Intensive management of woodland products would occur.

Impacts would be the same as the Midrange Alternative but with a 75 percent canopy cover removal limitation.

IMPACTS ON MINERALS

1. Mineral development would be adversely impacted because of wilderness designation.

Impacts would be the same as the Midrange Alternative.

2. Mineral development would be limited because of time of year restrictions to protect terrestrial wildlife.

Impacts would be the same as the Midrange Alternative.

3. No adverse impact would occur from segregation of the Ruby Marsh Campground.

Impacts would be the same as the Resource Production Alternative.

ECONOMIC IMPACTS

Recreation and Wildlife

Impacts would be the same as those of the Midrange Alternative.

Wilderness

Impacts would be the same as those of the Midrange Alternative.

Livestock Grazing

Impacts are the same as those in the Midrange Alternative for all RCAs except Metropolis and Ruby/Wood Hills which would be the same as the Resource Production Alternative.

TABLE 4-17

PROJECTED CRUCIAL WILDLIFE HABITAT CONDITION

RCA	Excellent	Good	Fair	Poor
Cherry Creek	10,440	17,400	39,180	21,480
Spruce/Goshutes	0	38,880	44,280	12,240
Mary's River	———	Unknown	Unknown	———
O'Neil/Salmon Falls	18,600	12,400	24,480	16,320
Goose Creek	0	0	0	0
Pilot/Crittenden	0	0	0	0
Metropolis	———	Unknown	Unknown	———
Ruby/Wood Hills	0	0	16,740	11,160
TOTAL	29,040	68,680	124,680	61,200

TABLE 4-18

PROJECTED NONCRUCIAL WILDLIFE HABITAT CONDITION

RCA	Excellent	Good	Fair	Poor
Cherry Creek	16,440	36,160	51,780	23,320
Spruce/Goshutes	4,140	96,900	476,340	275,720
Mary's River	0	89,280	59,520	0
O'Neil/Salmon Falls	14,100	23,380	30,260	13,960
Goose Creek	0	37,260	71,760	31,280
Pilot/Crittenden	8,100	5,400	0	0
Metropolis	0	0	14,940	9,960
Ruby/Wood Hills	0	0	49,680	33,120
TOTAL	42,780	288,380	754,280	387,360

The impacts on gross livestock sales and net ranch income by ranch size/type would be nearly the same as the Midrange Alternative.

The cumulative impacts to the livestock industry would be the same as the Midrange Alternative except that the increase of livestock sales would be $558,000 or about 3.5 percent. The increase in net ranch income would be $235,500 annually. This would result in an increase of agricultural employment of 13 persons, which is about four percent of the 1980 ranching industry employment in the Wells RA. These would be insigificant beneficial impacts to the livestock industy in all but the Ruby/Wood Hills RCA where they would be significant. The following listing displays these cumulative impacts by RCA.

RCA	Increase in Gross Livestock Sales	Increase in Net Ranch Income
Cherry Creek	$19,019	$ 2,565
Spruce/Goshutes	179,021	86,149
Mary's River	86,448	42,624
O'Neil/Salmon Falls	81,416	44,252
Goose Creek	37,154	10,777
Pilot/Crittenden	24,412	12,053
Metropolis	16,460	9,052
Ruby/Wood Hills	114,070	28,028
TOTAL	$558,000	$235,500

The projected AUM increases for each RCA except Ruby/Wood Hills would be relatively small as compared to the total gross sales and net ranch income within each RCA. Individual ranches should not be significantly impacted except for the Ruby/Wood Hills RCA.

Wild Horses

Impacts would be the same as those of the No Action and Midrange Alternatives except that wild horse numbers would fluctuate between a range below and equal to the 1981 estimated level.

Woodland Products

Impacts would be the same as those of the Midrange and Resource Protection Alternatives.

Construction Sector

Implementation of this alternative would involve improvements for recreation, livestock, wild horses, wildlife, and riparian improvement. Total cost is estimated at $4,595,500 (see Table 2-7). It is estimated that approximately 25 percent of this construction would be awarded to construction firms within the resource area or within the City of Elko.

These improvements would be completed in a seven year period. If construction activity is distributed evenly throughout the period, additional revenue of approximately $164,000 per year (in 1980 dollars) would accrue to local construction firms. This increase in revenue would produce additional personal income to owners and employees of local construction firms of about $66,800 per year. This additional income could provide employement for about 32 additional county construction workers or 4.8 percent of that labor force. About 13 other service oriented jobs would be generated. Therefore, an increase of 45 jobs or 2.4 percent in the total Wells RA employment would result. The increase in personal income and employment would not be significant to the construction sector, nor to the total resource area economy.

IMPACTS ON SOCIAL VALUES

Lands

Impacts would be the same as the Resource Production Alternative.

Corridors

Impacts would be the same as those of the Midrange Alternative.

Access

Impacts would be the same as those of the Midrange Alternative.

Recreation

Impacts would be the same as those of the Midrange Alternative except that minimal development would also take place on public land along Mary's River.

Wilderness

Impacts would be the same as those of the Midrange Alternative.

Livestock Grazing

Impacts would be the same as those of the Midrange Alternative except that operators in the Ruby/Wood Hills and Metropolis RCAs would experience impacts like those of the Resource Production Alternative.

Wild Horses

Impacts would be the same as those of the No Action and Midrange Alternatives except that horse numbers would fluctuate between a range below and equal to 1981 levels.

Terrestrial Wildlife Habitat

Impacts would be about the same as those of the Midrange Alternative.

Riparian/Stream Habitat

Impacts would be the same as those of the Midrange Alternative.

Woodland Products

Impacts would be the same as those of the Midrange Alternative.

Minerals

Impacts would be the same as those of the Midrange Alternative.

OVERALL SUMMARY OF IMPACTS

The impacts of the Preferred Alternative in the RCAs and the resource area are summarized in Table 4-19.

TABLE 4-19

IMPACTS OF THE PREFERRED ALTERNATIVE

ISSUE/Impact	Cherry Creek	Spruce/ Goshutes	Mary's River	O'Neil/Salmon Falls	Goose Creek	Pilot/ Crittenden	Metropolis	Ruby/Wood Hills	Wells RA
LANDS: Land values could decrease	NA	Land values in West Wendover could decrease (SA).	NA	Land values in Jackpot could decrease (SA).	NA	Land values in Montello & Pilot Valley could decrease (SA).	Land values in Wells could decrease (SA).	Land values in Wells & Clover Valley could decrease (SA).	Land values could decrease (SA).
CORRIDORS: Utility & transportation companies would benefit.	Corridor designations and identifications would provide more then adequate opportunities for long range planning by utility and transportations companies (SB).				NA	Corridor designationa and identifications would provide more then adequate opportunities for long range planning by utility and transportation companies (SB).			
Designarion or identification of corridors would impact:	NS	Visual quality (SA) Bald eagles (SA) Wilderness character within the northern portion of the South Pequop WSA (SA)	NS	Visual quality (SA)	NA	Visual quality (SA) ------>	Bald eagles (SA)	NS	SA
ACCESS: Public access easements would be acquired	NA	Public access easements would be acquired for access routes important for the public use and BLM administration of all resources. 11 / 40	4 / 5	10 / 29	2 / 4	3 / 19	4 / 34	1 / 7	35 Roads (SB) 138 Miles (SB)
RECREATION: Recreation opportunities would be enhanced	The quality of opportunities for hunting, fishing, and wildlife observation would improve (SB). Mule deer hunting would be increased by about 50 percent (SB) and general recreation visitor day use would increase (SB).	Camping & picnicking enhanced at Tabor Cr. Increase 800 visitor days (SB). Camping & fishing enhanced along Mary's River (SB).		Floatboating enhanced on Salmon Falls Cr. Increase 200 visitor days (SB).		Fishing enhanced at Crittenden Reservoir. Increase 300 angler days (SB).		Camping enhanced at Ruby Marsh Campground. Increase 7900 visitor days (SB).	
ORV use would be adversely impacted	No ORV limitations or restrictions on more than 99 percent of the resource area (NS) ---------->							160 acres limited (NS)	160 acres limited (NS)
WILDERNESS: Wilderness preservation	NA	3 Areas, 151,466 Acres (SB)	NA	1 Area, 8415 Acres (SB)	NA	NA	NA	NA	4 Areas, 159,881 Acres (SB)
Loss of wilderness character	NA	3 WSAs, 15,059 Acres (SA)	NA	1 WSA, 1011 Acres	NA	NA	NA	NA	4 WSAs, 16,070 Acres (SA)
LIVESTOCK GRAZING: Licensed use	Livestock use would continue at the three to five year licensed use level (NS) ------>						Increase 1566 AUMs, 4% (NS)	Increase 3346 AUMs, 22% (SB)	Increase 4912 AUMs, 1.7% (NS)
Native range condition	Native range condition would improve (SB) ---------->						Native range condition would improve (NS).		Native range condition would improve (SB).
Livestock management problems as result of land disposal	The potential problems that a permittee could experience if lands that he or she grazes under permit were acquired by someone else would be maximized under this alternative as it would dispose of the greatest amount of land (SA).								
	NA	SA	NA	SA	NA	SA	SA	SA	SA
Added cost to permittees by wilderness preservation	NA	16 total hours of added labor per year to 3 permittees (NS)	NA	0 hours of added labor (NS)	NA	NA	NA	NA	16 total hours of added labor per year to 3 permittees (NS)
Loss of livestock grazing during riparian improvement	26 AUMS 0.18% (NS)	NA	168 AUMs 0.37% (NS)	635 AUMs 0.89% (NS)	10 AUMs 0.04% (NS)	NA	0 AUMs (NS)	NA	839 AUMs 0.29% (NS)
WILD HORSES: Horse numbers	Numbers would fluctuate between a level below and equal to 1981 levels (NS).	Numbers would fluctuate between a level below and equal to 1981 levels except the Toano Herd which would remain at 1981 levels (NS).	NA	NA	NA	NA	NA	NA	Numbers would fluctuate between a level below & equal to 1981 levels except the Toano Herd which would remain at 1981 levels (NS).
Free roaming nature	Newly built fences would impede free roaming nature of all 6 herds (SA).		NA	NA	NA	NA	NA	NA	Fences would impede free roaming nature (SA)
Condition of wild horses	Water developments would improve condition of wild horses (SB).		NA	NA	NA	NA	NA	NA	Condition would improve (SB)
TERRESTRIAL WILDLIFE HABITAT: Opportunity to reintroduce native species enhanced	NA	ACEC designation would enhance reintroduction of peregrine falcon (SB). Wilderness designation & further study to examine potential conflicts between domestic & bighorn aheep enhance reintroduction of the latter (SB).	Peregrine falcon habitat would be maintained (NS).	Wilderness designation would enhance reintroduction of bighorn sheep (SB).	NA	Peregrine falcon habitat would be maintained (NS).	NA	NA	Opportunity to reintroduce peregrine falcon & bighorn sheep would be enhanced (SB).
Terrestrial riparian habitat condition	Terrestrial riparian habitat would improve by one condition class on 75 percent of those habitats in good, fair, or poor condition (SB). About 10 percent of those in fair or better condition would decline one condition class (NS).								
Big game habitat condition	About 60 percent of all existing habitats would improve one condition class (SB) ---------->								
Idenrified wildlife hazards or habitat conflicts	About 80 percent of existing fence hazards in crucial and 50 percent in noncrucial big game habitats would be corrected (SB). About 35 percent of the conflicts near springs and meadows would be corrected (SB).								
RIPARIAN/STREAM HABITAT: Miles & acres in good or better condition	10 82 SB	1 6 SB	27 535 SB	61 2021 SB	5 29 SB	NA	0 0 SA	NA	104 Miles (SB) 2673 Acres (SB)
Miles & acres in less than good condition	12 80 SA	2 26 SA	95 1579 SA	192 6881 SA	41 80 SA	NA	11 102 SA	NA	353 Miles (SA) 8748 Acres (SA)
WOODLAND PRODUCTS: Harvest levels of	Fuelwood would increase (SB)	Fuelwood would increase (SB). Christmas tree harveat would not change w/ wilderness designation (NS).	NA	NA	Fuelwood would increase (SB)	Fuelwood would increase (SB)	NA	Fuelwood would increase (SB)	Harvest levels of fuelwood would increse by more than 10% (SB).
Intensive management of	Christmas trees & fuelwood (SB)		NA	NA	Fuelwood (SB)	Christmas trees & fuelwood (SB)	NA	Christmas trees & fuelwood (SB)	
MINERALS: Restricted mineral development because of wilderness designation	NA	21,350 acrea having good mineral potential recommended as suitable for wilderness (SA).	NA	400 acrea having good mineral potential recommended as suitable for wilderness (NS).	NA	NA	NA	NA	21,750 acres having good mineral potential recommended as suitable for wilderness (SA).
Acres where time of year restrictions would slow oil/gas & geothermal development	NS	NS	NS	170,800 acres (25%) for sage grouse (SA)	42,200 acres (20%) for sage grouse (SA)	NS	NS	56,300 acres (17%) for sage grouse (SA)	NS

NS = No significant Impact; NA = Not applicable; SB = Significant Beneficial Impact; and SA = Significant Adverse Impact

Short-term Uses vs. Long-term Productivity

The following actions may affect overall productivity of Wells RA public lands. Detrimental or beneficial impacts are identified as appropriate.

1. Land disposal actions for agricultural purposes would be beneficial over the long-term with respect to vegetative productivity.

2. Land disposal actions for community expansion would be detrimental to natural resources productivity over the long-term. Other land disposal actions would not be expected to have a significant impact on long-term productivity.

3. Actions which result in the maintenance of the current situation (No Action) in terms of livestock and wild horse grazing management would result in a long-term loss in productivity of livestock, forage, riparian/stream and wildlife habitat, soil and water resources, and the economic structure of the farming community. Actions which enhance the vegetative resources (including livestock and wildlife forage and habitats) will result in an increase in long-term productivity.

4. Maintenance of a no action policy for woodland products will result in a long-term loss of productivity.

5. Range seedings should improve productivity over the long-term. However, unsuccessful seedings could lower productivity.

Impacts associated with implementing the various alternatives are provided in Tables 4-3, 4-6, 4-11, 4-16, and 4-19. The impacts on long-term productivity are best summarized in these tables.

Irreversible and Irretrievable Commitments of Resources

IRREVERSIBLE COMMITMENT OF RESOURCES

1. Any actions which result in disposals of public lands are considered irreversible, since the lands themselves will no longer be available for management.

2. Actions which result in permanent corridors being created are considered irreversible.

3. Permanent recreation facilities completed under the scope of this document will constitute an irreversible commitment of resources.

4. Areas which are wilderness in character but which lose these features as a result of management actions included within this EIS will sustain an irreversible loss.

5. Permanent grazing improvements such as water developments will be irreversible for the areas on which they are located.

6. Lowered vegetational productivity and changes in plant community composition which occur as a result of seedings, increased erosion from grazing, ORV activity, harvesting woodland products, or other vegetative disturbances could be irreversible.

7. Evaporation of water from newly created impoundments would be an irreversible commitment.

IRRETRIEVABLE COMMITMENT OF RESOURCES

1. Generally, all fossil fuels, labor, capital, and unsalvageable construction materials used to implement the RMP constitute an irretrievable commitment of resources.

2. Any Federal lands sold or exchanged would be an irretrievable loss, since resources associated with them would no longer be managed for the benefit of the public.

3. Any construction, corridor designations or other action which would create a permanent scar or intrusion on Wells RA lands having high recreation, wilderness, or aesthetic values would constitute an irretrievable commitment of resources.

4. Loss of recreational opportunities as a result of loss of access, land disposals, changes in wilderness character, or land treatments would be irretrievable.

5. Any loss of wildlife or fisheries resources over the short or long-term from range seedings, livestock grazing practices, or land disposal actions and subsequent development would be irretrievable.

6. Construction or disposal which result in the loss of cultural resources are an irretrievable commitment of resources.

7. Soil erosion losses resulting from management activities are irretrievable losses.

8. Any loss of human resources such as a ranching operation going out of business as a result of implementation of the RMP would be an irretrievable loss.

9. Loss of woodland products through harvesting activities would be an irretrievable commitment.

10. Mineral resources removed as a result of implementing the management options in the RMP would be an irretrievable commitment.

11. Loss of a localized population of Lahonton cutthoat trout, shown to be genetically differenciated, due to continued habitat degradation would be an irretrievable commitment.

CHAPTER 5

LIST OF PREPARERS

CHAPTER 5

LIST OF PREPARERS

Name	Title	Responsibility
Kurtis J. Ballantyne	Wildlife Biologist	Terrestrial Wildlife Habitat & T&E Species
Remsen Behrer	Surface Protection Specialist	Soils & Vegetation
Charles Boyer	Area Manager	Overall Review
Steven Brooks	Geologist	Geology/Minerals
Kevin Carson	Outdoor Recreation Planner	Wilderness/Recreation
Russell T. Dailey	Natural Resource Specialist	Writer/Reviewer
Gene L. Drais	Outdoor Recreation Planner	RMP Team Leader/Editor & Wilderness
David C. Jaynes	Supervisory Range Conservationist	Vegetation & Livestock Grazing
Bonnie Martiartu	Clerk/Typist	Typing of Document
Roy Masinton	Fisheries Biologist	Riparian/Stream Habitat
Nancy Phelps-Lymbery	Range Conservationist	Writer/Reviewer
Bruce Portwood	Wild Horse Specialist	Wild Horses
Norman Ritter	Forester	Woodland Products
Donn Siebert	Watershed Specialist	Hydrology, Climate, & Water
Phil Silva	Cartographer	Preparation of Maps
William Slaichert	Economist	Economics, Social Values, Public Attitudes, & Access
David J. Vandenberg	Realty Specialist	Lands & Corridors
Robert E. Woerner	Writer/Editor	RMP Team Leader/Editor

CHAPTER 6

PUBLIC PARTICIPATION AND SCOPING

CHAPTER 6

PUBLIC PARTICIPATION AND SCOPING

Communication and consultation with all interested public land users and other concerned people have been important components in the Wells RMP/EIS process and they will continue to be important in the decision making and implementation processes. Public participation will continue through such means as comment periods, news releases, Coordinated Resource Management and Planning (CRMP), and informational meetings.

The planning issues and criteria were developed only after intensive input and review by the public. Initially, several public meetings were held in March and April of 1979 to identify issues of concern to individuals in the Wells RA. In addition, representatives of state and local governments, including the Elko Mayor and the Elko County Manager, and representatives of various user and interest groups (mining, livestock, environmental, and sportsmen) were contacted in November of 1979. This public input was combined with input from BLM staff specialists to identify and develop a set of planning issues.

A Federal Register notice of intent was published on May 23, 1980. This notice discussed issues to be considered in a general way and invited public comment and recommendations.

Planning criteria were developed to set standards and guidelines for the planning to follow. A draft version of the issues and planning criteria was distributed to the public in January 1981 in The Sage, a district newsletter. About 350 copies were sent to selected individuals, elected officials, interest groups, and other agencies. Another 4,000 copies were distributed as a supplement to the Elko Daily Free Press.

Fifty-seven responses were received. These included 33 individuals, four economic interest groups, two conservation groups, two "informal groups" (a family and an EIS consultant), and one university department spokesperson. A total of 38 respondents were residents of the Wells RA, while 12 were from the Reno-Carson City area and seven were from out of state.

The 57 public responses, along with comments received from the Nevada BLM State Office, were used to develop an initial set of planning issues and criteria. In July 1982, these were re-evaluated, with issues being restated as problem statements instead of general planning questions, and four issues being incorporated into other issues.

A second Federal Register notice was published on August 2, 1982. Its purpose was to present the revised issues noted above and the five alternatives to be analyzed in the EIS. This notice also initiated another 30-day public comment period.

An evening workshop in Reno, Elko, and Wells and a weeklong open house at the Elko District Office were held in September 1982. Comments received have been utilized, along with impact analyses, in developing the preferred alternative.

INTERAGENCY CONTACTS

Professional contacts have been made with the Nevada Department of Wildlife, the U.S. Fish and Wildlife Service, and the U.S. Forest Service.

The Economics, Statistics, and Cooperatives Services, (ESCS) U.S. Department of Agriculture, provided economic data for use in this EIS. These data were based on meetings with area ranchers and budget information gathered by the ESCS as part of a nation-wide study.

Agencies, organizations, and persons to whom copies of the Draft RMP/EIS will be sent include the following:

I. Governmental Agencies and Individuals

A. Governor Richard Bryan
B. Nevada Congressional Delegation
C. Federal Agencies

BLM State Offices
Bureau of Indian Affairs
Bureau of Mines
Department of Commerce
Department of Energy
District Managers, BLM Districts in Nevada, Idaho
Environmental Protection Agency
Fish and Wildlife Service
Geological Survey
Humboldt National Forest
National Park Service
Water and Power Resources Service

D. Local Government

Community Services Division, Carson City
Elko City Mayor
Elko County Commissioners
Elko County Manager
Elko County Planning Commission
Jackpot Advisory Council
Wells City Mayor
West Wendover Advisory Council

II. Special Interest Groups and Others

A. Conservation and Wildlife Groups

American Fisheries Society
Audubon Society
Desert Fishes Council
Desert Research Institute
Elko County Sportsmen Assoc.
Friends of the Earth
National Resources Defense Council
National Wildlife Federation
Nevada Dept. Conservation & Natural Resources
Nevada Dept. of Wildlife
Nevada Wildlife Federation
Sierra Club
The Wildlife Society
Wilderness Society
Wildlife Management Institute

B. Cultural Resources

Nevada Division of Historic Preservation and Archaeology
Nevada Archaeological Society
Te-Moak Bands of Western Shoshone

C. Grazing Interests

Nevada Cattlemen's Assoc.
Nevada Woolgrower's Assoc.
Wells RA Livestock Operators

D. Land Management Interests

Elko County Assoc. of Conservation Districts
Federal Land Bank Assoc.
Nevada Division of Forestry
Nevada Farm Bureau Federation
Public Lands Council
Soil Conservation Service
Southern Pacific Land Co.

E. Mining Interests

AMOCO Production Co.
Anaconda Copper
Atlantic Richfield
Chromalloy Corp.
Freeport Gold
Nevada Mining Association
Union Oil Co.

F. Recreation Groups

Federation of Western Outdoor Clubs
National Rifle Association
Nevada Outdoor Recreation Association

G. Universities

University of Nevada, Reno

H. Utilities

California Pacific Utiilties
Sierra Pacific Power Co.
Western Pacific Railroad

I. Wildhorse Groups

American Horse Protective Association
International Society for the Protection
of Mustangs & Burros
National Mustang Assoc.
WHOA Inc.

APPENDICES

I THROUGH 6

APPENDIX 1

THE BLM WILDERNESS REVIEW PROCESS

The BLM wilderness review consists of three phases: (1) inventory, (2) study, and (3) reporting.

Inventory

The four wilderness study areas addressed in this study were identified using the wilderness inventory procedures described in the BLM's Wilderness Inventory Handbook of September 27, 1978. The results of the intensive wilderness inventory were announced on November 15, 1980. Copies of the booklet Wilderness Study Area Decisions: Nevada BLM Intensive Wilderness Inventory are available at all BLM offices in Nevada.

In order to qualify for wilderness study area status, an area was required to contain the following wilderness characteristics described in the Wilderness Act of 1964: (1) have at least 5,000 acres or more of contiguous public land or be of a size to make practical its preservation and use in an unimpaired condition; (2) generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; and (3) have outstanding opportunities for solitude or a primitive and unconfined type of recreation. In addition, areas qualifying for wilderness study area status may contain supplemental values which include ecological, geological, or other features of scientific, educational, scenic, or historic value. The BLM wilderness inventory determined that four wilderness study areas within the Wells Resource Area contain these minimum wilderness characteristics.

Study

The primary goal of the BLM wilderness study process is to recommend for wilderness designation those areas where wilderness is determined to be the most appropriate use of the land and its resources.

It is the policy of BLM that each wilderness study area be studied through the BLM planning system to analyze all values, resources, and land uses. The findings of the study, including public participation, determine whether an area will be recommended as preliminarily suitable or nonsuitable for designation as wilderness. In practice, determining an area's "suitability or nonsuitability... for preservation as wilderness", in the words of the Federal Land Policy and Management Act, means determining whether the area is more suitable for wilderness designation or more suitable for other uses.

Reporting

The reporting phase consists of actually forwarding or reporting suitable and nonsuitable recommendations through the Secretary of the Interior and the President to Congress. Mineral surveys required by the Wilderness Act of 1964, environmental statements, and other data will be submitted with the recommendations.

APPENDIX 2

ALLOTMENT CATEGORIZATION PROCESS

Elko District Resource staff and Wells Resource Area staff personnel evaluated each allotment within Wells RA with respect to (1) existing range improvements, (2) potential for new projects, (3) resource conflicts, (4) land ownership patterns, (5) present management, (6) activity plans and (7) condition, trend, climax potential, and watershed condition (Appendix Table A2-1). Each allotment received a letter rating of M, I, or C for each criteria evaluated. The objective for Category M allotments is to maintain current condition, while that for Category I allotments is to improve condition. Category C allotments would provide for custodial management and protect existing resources. The criteria were then tabulated for each allotment with an overall allotment rating of M, I, or C being assigned. The overall allotment category rating determined what actions are proposed under each of the various alternatives.

TABLE A2-1

ALLOTMENT CATEGORIZATION FOR THE WELLS RESOURCE AREA

Cherry Creek

Allotment	Existing Range Improvements	Potential New RI and Veg. Manip.	Resource Conflicts	Land Ownership Objectives	Present Management	Activity Plans	Range Condition, Trend, Watershed Condition, Climax Potential	Category
Ruby #9	M	M	M	M	I	M	I	M
Bald Mountain	M	I	M	M	I	M	I	M
Currie[1,2]	I	I	I	M	I	I	I	I
North Butte Valley	M	M	M	M	M	M	M	M
Maverick	I	I	I	M	I	I	I	I
West Cherry Creek	I	I	I	M	I	I	I	I
Odger's	I	I	I	M	I	I	I	I

[1]Wild Horse Management Plan could be implemented with no major project work required.

[2]Conflicts will arise from fencing proposals for livestock management. Fences will hamper wild horse movements and inhibit free roaming behavior.

Mary's River

Hot Creek	M	M	M	M	M	M	M	M
Anderson Creek[1]	M	M	I	M	M	I	M	M
Stag Mountain	I	I	I	M	I	I	I	I
Pole Creek	C	C	C	I	C	C	M	C
Stormy	I	I	I	I	M	I	M	I
Devils Gate	I	I	I	I	I	I	I	I
Deeth	I	I	I	I	M	I	M	I
Morgan Hill	C	C	C	C	C	C	M	C

[1]Significant aquatic/riparian habitat conflicts with livestock grazing exist. Rehabilitation of this crucial habitat, with few or no impacts to other resources (including livestock) is possible with intensive management.

TABLE A2-1 (Continued)
ALLOTMENT CATEGORIZATION FOR THE WELLS RESOURCE AREA

Spruce/Goshutes

Allotments	Existing Range Improvements	Potential New RI and Veg. Manip.	Resource Conflicts	Land Ownership Objectives	Present Management	Activity Plans	Range Condition, Trend, Watershed Condition, Climax Potential	Category
Big Springs	I	I	I	I	I	I	I	I
Pilot	C	M	I	I	M	C	M	M
Ferber Flat	C	M	M	C	M	C	M	M
Lead Hills[1]	C	M	M	C	M	C	M	M
Boone Springs	M	M	M	C	M	C	M	M
White Horse[1]	M	M	M	C	M	C	M	M
Sugarloaf	M	M	M	C	M	C	M	M
Leppy Hills	M	M	M	C	M	C	M	M
Spruce[1]	I	I	I	M	I	I	I	I
West White Horse	M	M	M	C	M	C	M	M
Bad Lands[3]	M	M	I	M	M	C	M	M
Utah-Nev #1 [2,3]	M	M	I	M	M	C	M	M
Antelope Valley[4]	M	M	I	M	M	C	M	M
Chace Springs	I	I	M	M	I	I	I	I

[1]Minor conflicts with domestic sheep and potential bighorn sheep reintroduction exist.

[2]Minor conflicts with domestic sheep and potential bighorn sheep reintroduction exist. Additional conflicts occur with lands, minerals, recreation, and ACEC designation.

[3]Forage competition exists between domestic winter sheep and crucial antelope winter range.

[4]Conflicts occur between livestock grazing and antelope kidding area.

O'Neil/Salmon Falls

Buckhorn	I	I	I	M	I	I	I	I
Gully[1]	M	M	I	M	M	M	M	M
Hubbard Vineyard	I	I	I	M	I	I	I	I
Bear Creek	C	C	C	M	C	C	M	C
Jackpot[1]	M	M	I	M	M	M	M	M
O'Neil[1]	M	M	I	M	M	M	M	M
Salmon River	I	I	I	M	I	I	I	I
Cottonwood[1]	M	M	I	M	M	M	M	M

[1]Significant aquatic/riparian habitat conflicts with livestock grazing exist. Rehabilitation of this crucial habitat, with few or no impacts to other resources (including livestock) is possible with intensive management.

TABLE A2-1 (Continued)
ALLOTMENT CATEGORIZATION FOR THE WELLS RESOURCE AREA

Goose Creek

Allotments	Existing Range Improvements	Potential New RI and Veg. Manip.	Resource Conflicts	Land Ownership Objectives	Present Management	Activity Plans	Range Condition, Trend, Watershed Condition, Climax Potential	Category
Big Bend	I	I	I	M	I	I	I	I
Grouse Creek	I	I	I	M	I	I	I	I
Barton	M	M	M	M	M	M	M	M
Cavanaugh	M	M	M	M	M	M	M	M
Bluff Creek	M	M	M	M	M	M	M	M
Little Goose Creek	I	I	I	M	I	I	I	I

Pilot/Crittenden

Pilot Valley[1]	C	C	I	C	C	I	M	C
Dairy Valley	I	I	I	I	I	I	I	I
Gamble	I	I	I	I	I	I	I	I

[1]The value of Pilot Peak for deer, elk, and bighorn sheep habitat is considerably below potential. Significant conflicts exist between management goals for wildlife habitat and other proposed land actions.

Metropolis

Black Butte	M	M	M	I	M	M	M	M
Town Creek	C	M	C	I	C	C	C	C
Rabbit Creek	I	I	C	M	I	I	M	I
Bishop Creek	M	M	M	I	M	M	M	M
Wells	C	M	C	I	C	C	C	C
Antelope	I	M	I	I	I	I	I	I
Dalton	C	M	C	I	C	C	C	C
HD	M	M	M	I	M	M	M	M
Holborn	M	M	M	I	M	M	M	M
Cedar Hill	C	M	C	I	C	C	C	C
Metropolis	M	M	M	I	M	M	I	M
Railroad Field	M	M	C	I	M	M	M	M
Westside	I	I	M	I	I	I	M	I
Spratling	M	M	M	I	M	M	M	M
Trout Creek	C	M	C	I	C	C	C	C
Metropolis Seeding	I	I	M	I	I	I	M	I
Bishop Flat	C	M	C	I	C	C	C	C

TABLE A2-1 (Continued)
ALLOTMENT CATEGORIZATION FOR THE WELLS RESOURCE AREA

Ruby/Wood Hills

Allotments	Existing Range Improvements	Potential New RI and Veg. Manip.	Resource Conflicts	Land Ownership Objectives	Present Management	Activity Plans	Range Condition, Trend, Watershed Condition, Climax Potential	Categor
Gordon Creek	C	M	C	C	C	C	C	C
Warm Creek	I	M	I	M	I	I	I	I
Ruby #4	C	M	C	C	C	C	C	C
Harrison	M	M	M	M	M	M	M	M
Forest	C	M	C	C	C	C	C	C
Ruby #1	M	M	M	M	M	M	M	M
South Ruby	C	M	C	C	C	C	C	C
Ruby #2	M	M	M	M	M	M	M	M
Curtis Springs	M	M	M	M	M	M	M	M
Moor Summit[1]	M	M	I	I	I	M	M	M
Tabor	C	M	C	C	C	C	C	C
Snow Water Lake	M	M	M	M	M	M	M	M
Ruby #5	M	M	M	M	M	M	M	M
Smiley	M	M	M	I	M	M	M	M
Ruby #7	M	M	M	M	M	M	M	M
Hylton	M	M	M	I	M	M	M	M
Wood Hills[1]	C	M	I	M	C	C	M	M
Clover Creek	M	M	M	I	M	M	M	M
Big Meadows	M	M	M	M	M	M	M	M
Ruby #6	M	M	M	M	M	M	M	M
Ruby #8	I	I	M	M	I	I	I	I
Mayheu Creek	C	M	C	C	C	C	C	C
Kelly Field	C	M	C	C	C	C	C	C
Bennett Field	C	M	C	C	C	C	C	C
Overland Creek	C	M	C	C	C	C	C	C
Ruby #3	M	M	M	M	M	M	M	M

[1] Minor conflicts exists with current livestock management practices and important deer winter range.

TABLE A2-2
ESTIMATED ECOLOGICAL RANGE CONDITION BY RCA FOR THE WELLS RESOURCE AREA

RCA	Excellent Acres	Excellent Percent	Good Acres	Good Percent	Fair Acres	Fair Percent	Poor Acres	Poor Percent
Cherry Creek			101,331	28	113,793	32	141,544	40
Mary's River			57,948	20	189,740	64	45,968	16
Spruce/ Goshutes	38,573	2	430,486	25	942,963	54	331,805	19
O'Neil/ Salmon Falls			106,086	17	383,256	61	138,932	22
Goose Creek	5,118	3	62,510	33	78,636	41	45,049	23
Pilot/ Crittenden			153,058	35	251,860	57	34,429	8
Metropolis			60,207	16	212,807	57	69,727	19
Ruby/ Wood Hills			80,642	32	117,630	47	34,507	14
TOTAL	43,691	1	1,052,268	25	2,290,685	54	841,961	20

NOTE: Allotments having all or most of their acreage seeded to crested wheatgrass were not rated. Therefore, they are not included in these acres.

Source: Bureau of Land Management 1982b

APPENDIX 3

Terrestrial Wildlife

Appendix 3 depicts tables showing existing big game numbers and resonable numbers from NDOW for each RCA (Appendix Table A3-1). Also shown are the habitat conditions by RCA for mule deer, pronghorn antelope, elk, and bighorn sheep (Appendix Table A3-2). Table A3-3 shows current condition of terrestrial riparian habitat by RCA.

APPENDIX TABLE A3-1

BIG GAME NUMBERS BY RCA
FOR THE WELLS RESOURCE AREA

RCA	Mule Deer	Pronghorn Antelope	Bighorn Sheep	Elk
Cherry Creek				
Reasonable No.	6,400	280	0	0
Existing No.	4,400	110	0	0
Spruce/Goshutes				
Reasonable No.	17,100	580	330	30
Existing No.	11,800	230	0	65
Mary's River				
Reasonable No.	7,900	530	0	9
Existing No.	3,700	100	0	0
O'Neil/Salmon Falls				
Reasonable No.	19,700	875	150	101
Existing No.	6,900	165	0	0
Goose Creek				
Reasonable No.	6,200	0	0	0
Existing No.	2,800	0	0	0
Pilot/Crittenden				
Reasonable No.	4,300	0	15	30
Existing No.	1,900	0	0	21
Metropolis				
Reasonable No.	5,100	875	0	0
Existing No.	2,300	165	0	0
Ruby/Wood Hills				
Reasonable No.	7,000	60	30	0
Existing No.	4,900	30	0	0
RA Total				
Reasonable No.	73,700	3,200	525	170
Existing No.	38,700	800	0	86

Source: Nevada Department of Wildlife 1977, 1978

APPENDIX TABLE A3-2

MULE DEER HABITAT CONDITION
FOR THE WELLS RESOURCE AREA
(ACRES)

RCA Habitat	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek						
Summer		11,300	22,500			33,800
Winter		16,100	19,500			35,600
Crucial Winter		17,400	17,400			34,800
TOTAL ACRES		44,800	59,400			104,200
Spruce/Goshutes						
Summer					10,400	10,400
Winter		6,900	61,700	73,800		142,400
Crucial Winter			64,800			64,800
Spring-Fall					21,600	21,600
Yearlong			95,200			95,200
TOTAL ACRES		6,900	221,700	73,800	32,000	334,400
Mary´s River						
Summer			148,800			148,800
Crucial Summer					36,900	36,900
Yearlong					24,200	24,200
TOTAL ACRES			148,800		61,100	209,900
Salmon Falls						
Spring					10,400	10,400
Summer					205,700	205,700
Winter		23,500	23,300	7,000		53,800
Crucial Winter		31,000		40,800		71,800
Yearlong					14,100	14,100
TOTAL ACRES		54,500	23,300	47,800	230,200	355,800
Goose Creek						
Summer			62,100			62,100
Winter				78,200		78,200
TOTAL ACRES			62,100	78,200		140,300
Pilot/Crittenden						
Summer					10,600	10,600
Winter					123,200	123,200
Yearlong		13,500				13,500
TOTAL ACRES		13,500			133,800	147,300

APPENDIX TABLE A3-2 (Continued)

MULE DEER HABITAT CONDITION
FOR THE WELLS RESOURCE AREA (Cont.)
(ACRES)

Habitat	Excellent	Good	Fair	Poor	Unknown	Total
Metropolis						
Crucial Summer					36,200	36,200
Yearlong					3,600	3,600
TOTAL					39,800	39,800
Ruby/Wood Hills						
Crucial Summer					15,100	15,100
Spring					3,900	3,900
Winter				22,900	3,700	26,600
Crucial Winter					1,700	1,700
TOTAL				22,900	24,400	47,300
R.A. TOTAL	0	119,700	515,300	222,700	521,300	1,379,000

Source: Bureau of Land Management 1981d.

PRONGHORN ANTELOPE HABITAT CONDITION
FOR THE WELLS RESOURCE AREA
(ACRES)

RCA

Habitat	Good	Fair	Poor	Unknown	Total
Cherry Creek					
Crucial Yearlong			45,300		45,300
Crucial Kidding			8,400		8,400
Yearlong			58,300		58,300
TOTAL ACRES			112,000		112,000
Spruce/Goshute					
Winter			6,500		6,500
Crucial Kidding			30,600		30,600
Yearlong			609,000		609,000
TOTAL ACRES			646,100		646,100
Mary's River					
Summer				45,700	45,700
Yearlong				68,100	68,100
TOTAL ACRES				113,800	113,800

APPENDIX TABLE A3-2 (Continued)

PRONGHORN ANTELOPE HABITAT CONDITION
FOR THE WELLS RESOURCE AREA (Cont.)
(ACRES)

Habitat	Good	Fair	Poor	Unknown	Total
O'Neil/Salmon Falls					
Summer				248,900	248,900
Winter			27,900		27,900
TOTAL ACRES			27,900	248,900	276,800
Metropolis					
Summer				172,300	172,300
Winter			24,900	8,800	33,700
Yearlong				55,000	55,000
TOTAL ACRES			24,900	236,100	261,000
Ruby/Wood Hills					
Crucial Kidding			5,000		5,000
Yearlong			82,800		82,800
TOTAL ACRES			87,800		87,800
R.A. TOTAL	0	0	898,700	598,800	1,497,500

Source: Bureau of Land Management 1981d.

ELK HABITAT AND POTENTIAL ELK AND BIGHORN SHEEP HABITAT
FOR THE WELLS RESOURCE AREA
(ACRES)

Habitat	Good	Fair	Poor	Unknown	Total
Spruce/Goshute					
Elk Yearlong	15,100				15,100
Potential Bighorn Sheep Yearlong	20,900		34,300		55,200
Mary's River					
Potential Elk Winter				3,900	3,900
O'Neil/Salmon Falls					
Potential Elk Summer				9,100	9,100
Potential Elk Winter				41,500	41,500
Potential Bighorn Sheep Yearlong	10,800				10,800
Pilot/Crittenden					
Elk Yearlong	2,700				2,700

Source: Bureau of Land Management 1981d.

TABLE A3-3

CURRENT TERRESTRIAL RIPARIAN HABITAT CONDITION BY RCA (ACRES)[1]

RCA	Excellent	Good	Fair	Poor	Unknown	Total
Cherry Creek	21	77	52	19	45	214
Spruce/Goshute	18	67	46	15	40	186
Mary's River	58	212	144	52	124	590
O'Neil/Salmon Falls	92	337	230	83	197	939
Goose Creek	37	135	92	37	78	379
Pilot/Crittenden	16	58	40	15	34	163
Metropolis	10	38	26	10	22	106
Ruby/Wood Hills	10	38	26	10	22	106
TOTAL ACRES	262	962	656	241	562	2,683
% BY CONDITION CLASS	10%	36%	24%	9%	20%	100%

[1]Eighty percent of the terrestrial riparian habitat is made up of small groups of trees (riparian), 71% of the acreage for this feature is in good or better condition.

Source: Bureau of Land Management 1981d.

APPENDIX 4

PUBLIC CONTACT PRIOR TO
THE WELLS RA STREAM INVENTORY

Each individual owning segments of streams identified for complete inventory was contacted prior to survey with the letter below. No objections were received. One individual requested that no motorized vehicles be allowed on his hay meadows and another asked to be notified when the inventory would be done on their land, indicating that they wanted to be in attendance. BLM complied with both requests.

Bureau of Land Management
Elko District Office
2002 Idaho Street
Elko, Nevada 89801

May 4, 1979

Beginning about June 18, 1979 and continuing through the summer of 1981 personnel of the Bureau of Land Management will be engaged in a stream survey and inventory. This stream survey is needed to provide information for the upcoming Environmental Statement covering the Wells Resource Area.

In order to reach some portions of the streams which are on National Resource Lands, we will have to cross private holdings. Extra care will be taken when negotiating your private land.

As you know nearly all of the streams in the district flow through both public and private lands. So that we may get a complete profile on the entire water course, we would like to follow the full length of the stream. No permanent transects or fixtures would be used on the private segments of the stream. We would only be interested in an ocular reconnaissance of the private areas.

If you find that you have objections or questions concerning this action please feel free to contact Val Crispin in this office. (738-4071)

LEE K. WANGSGARD, Manager
Wells Resource Area

APPENDIX 5

ECONOMIC AND SOCIAL ANALYSIS METHODOLOGY

Determining Impacts To Ranch Income and Employment

Ranch income impacts were estimated by use of a ranch budget analysis and linear programming model developed by Dr. Kerry Gee at Colorado State University (Tables A5-1 and A5-2). Impacts to individual RCAs utilized individual ranch data from the computer analysis which was then multiplied by the total number of ranches in each size category within each RCA. Net ranch income is computed by deducting total cash costs and the value of family labor from gross livestock income. The remaining revenue (net ranch income) is available to service long-term debts on land and capital and to provide a return to investment. The number of hours of hired labor for each grazing adjustment was taken from the computer budget analysis and multiplied by the corresponding number of ranches in each size category in the Wells RA. This number was then multiplied by $6.73 per hour which is the average wage for general farmworkers (Nevada Employment Security Department 1980a). Employment impacts to the ranching sector are estimated by applying a direct employment coefficient (23.436) from a Humboldt Regional Model (Fillo et al. 1978) to the change in gross ranch revenue resulting from each of the grazing adjustments. The direct employment coefficient indicates the change in sectoral employment for each million dollar change in gross revenue. Indirect employment impacts were estimated with an employment multiplier (1.8031) for the livestock sector.

TABLE A5-1 — Costs and returns for beef herds of 0-199 cows
BLM-Wells EIS Area
Northeast Nevada

Item	Unit	Number	Ave. Weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	9	360	80.67	2,614
Heifer calves	Head	4	330	71.75	947
Yearling steers	Head	13	625	68.56	5,571
Yearling heifers	Head	4	550	64.95	1,429
Cull cows	Head	10	900	43.07	3,876
Cull Yrlng Heifers	Head	3	630	61.13	1,155
Total					15,592
Total/cow					210.70

Cash costs:	Total Value	Value/Cow
BLM grazing fee	911	12.31
Forest grazing fee	745	10.06
Other BLM Grazing Fee	640	8.64
State lease	—	—
Hay (produce)	2,260	30.53
Hay (purchase)	—	—
Protein supplement	1,245	16.82
Irrigated pasture	—	—
Salt and mineral	130	1.75
Concentrate feeds	—	—
Veterinary and medicine	444	6.00
Hired trucking	276	3.73
Marketing	119	1.61
Fuel and lubricants	845	11.41
Repairs	828	11.18
Taxes	2,283	30.86
Insurance	444	5.99
Interest on operating capital	586	7.92
General farm overhead	663	8.96
Other cash costs	—	—
Hired labor	1,043	14.08
Total cash costs	13,461	181.91
Other costs:		
Family labor	2,083	28.15
Depreciation	2,524	34.11
Interest on investment other than land	7,910	106.89
Interest on land	29,172	394.22
Total other costs	41,689	563.36
Total all costs	55,150	745.27
Return above cash costs	2,131	28.80
Return above cash costs and family labor	48	.65
Return to total investment	-2,476	-33.46
Return to land	-10,386	-140.35

Average herd 74 cows, 80% calf crop based on Jan. 1 bred cow inventory, 6% calf loss birth to weaning, 3% annual cow loss, 20% replacement rate, 18 cows per bull, cattle and purchased hay prices 1978-80 three year averages, all other costs 1980, percent forage dependency Wells EIS Area 30%, other BLM 20%, National Forest 1%, deeded range 25%, hay 22% protein supplement 2%, real estate valued on an AU basis. Source: Gee 1982

TABLE A5-1 — Costs and returns for beef herds of 200-499 cows
BLM-Wells EIS Area
Northeast Nevada

Item	Unit	Number	Ave. Weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	48	360	80.67	13,940
Heifer calves	Head	24	330	71.75	5,683
Yearling steers	Head	71	625	68.56	30,424
Yearling heifers	Head	23	550	64.95	8,216
Cull cows	Head	44	900	43.07	17,056
Cull Yrlng Heifers	Head	10	630	61.13	3,851
Total					79,170
Total/cow					250.54

Cash costs:	Total Value	Value/Cow
BLM grazing fee	2,520	7.98
Forest grazing fee	333	1.05
Other BLM Grazing Fee	467	1.48
State lease	—	—
Hay (produce)	9,711	30.73
Hay (purchase)	—	—
Protein supplement	7,273	23.01
Irrigated pasture	—	—
Salt and mineral	553	1.75
Concentrate feeds	—	—
Veterinary and medicine	3,118	9.87
Hired trucking	1,938	6.13
Marketing	836	2.65
Fuel and lubricants	5,606	17.74
Repairs	5,018	15.88
Taxes	9,211	29.15
Insurance	1,925	6.09
Interest on operating capital	3,396	10.75
General farm overhead	4,656	14.73
Other cash costs	—	—
Hired labor	14,630	46.30
Total cash costs	71,191	225.29
Other costs:		
Family labor	7,313	23.14
Depreciation	12,453	39.41
Interest on investment other than land	34,616	109.54
Interest on land	115,815	366.50
Total other costs	170,197	538.60
Total all costs	241,388	763.89
Return above cash costs	7,979	25.25
Return above cash costs and family labor	666	2.11
Return to total investment	-11,787	-37.30
Return to land	-46,403	-146.84

Average herd 316 cows, 80% calf crop based on Jan. 1 bred cow inventory, 6% calf loss birth to weaning, 3% annual cow loss, 20% replacement rate, 18 cows per bull, cattle and purchased hay prices 1978-80 three year averages, all other costs 1980, percent forage dependency Wells EIS Area 18%, other BLM 3%, National Forest 3%, deeded range 52%, hay 21% protein supplement 3%, real estate valued on an AU basis. Source: Gee 1982

TABLE A5-1 — Costs and returns for beef herds of 500-999 cows
BLM-Wells EIS Area
Northeast Nevada

Item	Unit	Number	Ave. Weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	112	360	80.67	32,526
Heifer calves	Head	65	330	71.75	15,390
Yearling steers	Head	167	625	68.56	71,560
Yearling heifers	Head	65	550	64.95	23,220
Cull cows	Head	97	900	43.07	37,600
Cull Yrlng Heifers	Head	30	630	61.13	11,554
Total					191,850
Total/cow					258.21

Cash costs:	Total Value	Value/Cow
BLM grazing fee	6,226	8.38
Forest grazing fee	933	1.26
Other BLM Grazing Fee	6,849	9.22
State lease	184	.25
Hay (produce)	22,816	30.71
Hay (purchase)	—	—
Protein supplement	18,946	25.50
Irrigated pasture	—	—
Salt and mineral	1,301	1.75
Concentrate feeds	—	—
Veterinary and medicine	4,458	6.00
Hired trucking	1,984	2.67
Marketing	1,984	2.67
Fuel and lubricants	8,182	11.01
Repairs	7,659	10.31
Taxes	19,156	25.78
Insurance	4,411	5.94
Interest on operating capital	6,798	9.15
General farm overhead	6,658	8.96
Other cash costs	—	—
Hired labor	20,927	28.17
Total cash costs	139,472	187.71
Other costs:		
Family labor	10,451	14.07
Depreciation	23,674	31.86
Interest on investment other than land	77,843	104.77
Interest on land	244,182	328.64
Total other costs	356,150	479.34
Total all costs	495,622	667.06
Return above cash costs	52,378	70.50
Return above cash costs and family labor	41,927	56.43
Return to total investment	18,253	24.57
Return to land	-59,590	-80.20

Average herd 743 cows, 80% calf crop based on Jan. 1 bred cow inventory, 6% calf loss birth to weaning, 3% annual cow loss, 20% replacement rate, 18 cows per bull, cattle and purchased hay prices 1978-80 three year averages, all other costs 1980, percent forage dependency Wells EIS Area 20%, other BLM 1%, National Forest 3%, deeded range 47%, range lease 5%, hay 21% protein supplement 3%, real estate valued on an AU basis. Source: Gee 1982

TABLE A5-1 — Costs and returns for beef herds of 1,000 or more cows
BLM-Wells EIS Area
Northeast Nevada

Item	Unit	Number	Ave. Weight	Price Cwt	Total Value
Sales:					
Steer calves	Head	362	360	80.67	105,129
Heifer calves	Head	212	330	71.75	50,196
Yearling steers	Head	543	625	68.56	232,676
Yearling heifers	Head	212	550	64.95	75,732
Cull cows	Head	314	900	43.07	121,716
Cull Yrlng Heifers	Head	96	630	61.13	36,971
Total					622,420
Total/cow					258.37

Cash costs:	Total Value	Value/Cow
BLM grazing fee	19,222	7.98
Forest grazing fee	2,058	.85
Other BLM Grazing Fee	37,623	15.62
State lease	—	—
Hay (produce)	73,950	30.70
Hay (purchase)	—	—
Protein supplement	61,596	25.57
Irrigated pasture	—	—
Salt and mineral	4,215	1.75
Concentrate feeds	—	—
Veterinary and medicine	11,805	4.90
Hired trucking	1,120	.46
Marketing	3,361	1.40
Fuel and lubricants	13,003	5.40
Repairs	19,019	7.90
Taxes	55,822	23.17
Insurance	13,606	5.65
Interest on operating capital	20,192	8.38
General farm overhead	15,659	6.50
Other cash costs	—	—
Hired labor	46,095	19.13
Total cash costs	398,346	165.36
Other costs:		
Family labor	15,364	6.38
Depreciation	60,796	25.24
Interest on investment other than land	243,214	100.96
Interest on land	720,267	298.99
Total other costs	1,039,641	431.57
Total all costs	1,437,987	596.92
Return above cash costs	224,074	93.02
Return above cash costs and family labor	208,710	86.64
Return to total investment	147,914	61.40
Return to land	-95,300	-39.56

Average herd 2,409 cows, 80% calf crop based on Jan. 1 bred cow inventory, 6% calf loss birth to weaning, 3% annual cow loss, 20% replacement rate, 18 cows per bull, cattle and purchased hay prices 1978-80 three year averages, all other costs 1980, percent forage dependency Wells EIS Area 19%, National Forest 2%, deeded range 47%, range lease 8%, hay 21% protein supplement 3%, real estate valued on an AU basis. Source: Gee 1982

TABLE A5-1 — Costs and returns for sheep herds of all sizes
BLM-Wells EIS Area
Northeast Nevada

Item	Unit	Number	Ave. Weight	Price Cwt	Total Value
Sales:					
Slaughter lambs	Head	1,709	102	68.70	119,756
Feeder lambs	Head	1,708	89	73.96	112,428
Ewes	Head	894	130	26.86	31,217
Wool	Head	5,362	1,100	.88	51,904
Wool incentive paymt	Head	51,904	100	.39	20,243
Unshorn lamb payment	Head	3,263	100	1.38	4,503
Total					340,051
Total/ewe					64.69

Cash costs:	Total Value	Value/Head
BLM permit	11,694	2.22
Forest permit	1,046	.20
Salt and mineral	1,840	.35
Spray and dipping	525	.10
Veterinary and medicine	683	.13
Marketing	946	.18
Trucking	8,359	1.59
Shearing and tagging	9,463	1.80
Utilities	1,840	.35
Lamb promotion	2,208	.42
Organizations	263	.05
Legal and Acct.	2,208	.42
Wool storage	263	.05
Predator control	5,887	1.12
Ram death loss	2,733	.52
Fuel and lubricants	4,038	.77
Repairs	6,522	1.24
Hired labor	56,646	10.78
Taxes	10,265	1.95
Insurance	3,429	.65
General farm overhead	4,574	.87
Interest on operating capital	6,273	1.19
Total	141,705	26.96
Other costs:		
Family labor	24,274	4.62
Depreciation	30,237	5.75
Interest on investment other than land	76,697	14.59
Interest on land	220,777	42.00
Total other costs	351,985	66.96
Total all costs	493,690	93.91
Return above cash costs	198,346	37.73
Return above cash costs and family labor	174,072	33.11
Return to total investment	143,835	27.36
Return to land investments	67,138	12.77

Average herd 5,257 ewes, 100% docking rate, 12 percent lamb loss docking to marketing, 6 percent annual ewe loss, 23 percent annual replacement rate, 50 ewes per ram, sheep and purchased hay prices 1978-80 three year averages, all other costs 1980, percent forage dependency Wells EIS area 37 percent, Forest Service 3 percent, deeded range 60 percent, real estate valued on an AU basis.

TABLE A5-2

ECONOMIC IMPACTS BY ALTERNATIVE TO A TYPICAL SHEEP RANCH
IN THE WELLS RESOURCE AREA

	Initial	No Action	Resource Production	Midrange	Resource Protection	Preferred
Gross Livestock Sales	$340,080	$-5,592	$+39,814	$+14,443	$+48,510	$+16,062
Cash Expenses	$141,708	$-2,347	$+16,711	$+ 6,062	$-20,362	$+ 6,742
Net Ranch Income	$174,098	$-2,845	$+20,260	$+ 7,350	$-24,686	$+ 8,173
Herd Size	5,257	- 86	+ 615	+ 340	- 750	+ 378
Hours of Labor	18,645	- 306	+ 2,183	- 792	- 2,659	+ 881

Source: Gee 1982.

ECONOMIC IMPACTS BY ALTERNATIVE TO TYPICAL CATTLE RANCHES
IN THE WELLS RESOURCE AREA

Small Ranches

Gross Livestock Sales	$ 15,592	$- 300	$+ 2,110	$+ 760	$- 2,562	$+ 845
Cash Expenses	$ 11,918	$- 178	$+ 2,088	$+ 763	$- 1,526	$+ 849
Net Ranch Income	$ 1,591	$- 81	$- 260	$- 95	$- 488	$- 106
Herd Size	74	- 1	+ 10	+ 4	- 12	+ 4
Hours of Labor	720	- 14	+ 97	+ 35	- 118	+ 39

Source: Gee 1982.

TABLE A5-2 (Continued)
ECONOMIC IMPACTS BY ALTERNATIVES TO TYPICAL CATTLE RANCHES
IN THE WELLS RESOURCE AREA

Medium Ranches

	Initial	No Action	Resource Production	Midrange	Resource Protection	Preferred
Gross Livestock Sales	$79,168	$-652	$+4,622	$+1,681	$-5,640	$+1,869
Cash Expenses	$65,705	$-335	$+2,789	$+1,014	$-3,403	$+1,127
Net Ranch Income	$ 2,719	$-170	$+1,206	$+ 438	$-1,472	$+ 488
Herd Size	316	- 3	+ 18	+ 6	- 22	+ 6
Hours of Labor	5,847	- 48	+ 342	+ 124	- 416	+ 138

Medium/Large Ranches

Gross Livestock Sales	$191,855	$-2,595	$+18,429	$+6,690	$-28,091	$+7,439
Cash Expenses	$126,852	$-1,488	$+17,884	$+6,491	$-16,103	$+7,219
Net Ranch Income	$ 44,942	$- 836	$- 1,382	$- 501	$- 9,050	$+ 557
Herd Size	743	- 10	+ 71	+ 26	- 109	+ 28
Hours of Labor	9,444	- 128	+ 907	+ 329	- 1,106	+ 366

Large Ranches

Gross Livestock Sales	$622,402	$-5,249	$+37,358	$+13,549	$-45,524	$+15,067
Cash Expenses	$356,828	$-1,786	$+12,709	$+ 4,609	$-15,488	$+ 5,125
Net Ranch Income	$215,710	$-3,043	$+21,656	$+ 7,854	$-26,388	$+ 8,735
Herd Size	2,409	- 20	+ 144	+ 52	- 176	+ 58
Hours of Labor	22,110	- 187	+ 1,327	+ 481	- 1,617	+ 535

Source: Gee 1982.

CONSTRUCTION SECTOR IMPACTS

It is estimated that approximately 25 percent of the total construction proposed under each alternative would be awarded to firms within the Wells RA or from Elko. It should be noted that these improvements will be made over a seven year time period and are expressed in 1980 dollars which may inflate over time. The total revenue that will be awarded to local construction firms was divided by the seven year implementation period in order to determine the increase in annual direct revenue. Direct annual revenue was multiplied by the direct value added coefficient of .4072 in order to determine direct income for the construction sector (Nevada State Engineer's Office, Division of Water Resources 1974). Direct income was then expanded to total area income by a sectoral multiplier of 1.2502. Direct employment was calculated by multiplying the change in construction revenues by a direct employment coefficient (28.2397) for the construction sector. This coefficient indicates the change in employment for a one million dollar change in revenue. Total employment was obtained by multiplying direct employment by 1.3855, the construction sector employment multiplier.

ESTIMATING IMPACTS TO TAX REVENUES

Nevada charges a sales tax of 5.75 percent on all taxable sales in the county. Taxable sales do not include sales of products "which ordinarily constitute food for human consumption", (NRS 372.725) consequently livestock sales are not taxed. The increase or decrease in tax revenues was estimated by multiplying the change in indirect sales expected under each alternative by the 2.25 percent sales tax which is returned to the county. The indirect sales was determined by multiplying that fraction of the appropriate sectoral multiplier which is greater than one by the increase in total sales. In addition, the county receives 12.5 percent of the grazing fees collected by the BLM in the county (Section 10a, Taylor Grazing Act). A reduction in AUMs reduces the amount of revenue received by the county. This change was estimated by multiplying the change in AUMs used for each percentage increase or decrease by the grazing fee which goes to the county. These two impacts (change in sales tax and in grazing fees) were then totalled to derive an overall impact on county government revenues (information on BLM payments to county tax revenues was obtained from the state of Nevada Department of Administration, Carson City).

DERIVATION OF WILDLIFE/RECREATION EXPENDITURES, INCOME AND EMPLOYMENT

The number of days associated with hunting, fishing, and other recreational pursuits in the Wells RA is defined in Table A5-3.

Expenditure information (Table A5-4) for hunter and angler days was calculated from a Report of Impacts of Outdoor Recreation in Nevada (Nevada Division of State Parks 1980). Income generated from hunting and recreation expenditures was derived by first finding the average household's interdependence coefficient for the five sectors assumed to be affected by these expenditures (service station; casino; eating, drinking and lodging facilities; trade facilities; and other services). The average coefficient (0.296) was then multiplied by the direct expenditures generated to determine the impact on the household's sector (income) of the county economy (Table A5-5).

WOODLAND PRODUCTS

The value of woodland products was determined by multiplying the number of Christmas trees, cords of firewood, and wood fencing posts on the Wells RA by the market value of these products. The No Action Alternative is minus the commercial cutting. The Resource Production, Midrange, and Resource Protection Alternatives include commercial cutting.

WILDERNESS VALUES

A value of $10 per visitor day was used (Walsh, Gillman, and Loomis 1981). This value includes the "willingness to pay" value.

WILD HORSES (Forage Consumed)

A value of $7.88 per AUM was used. This represents the lease value of an AUM in 1980 (Economics, Statistics, and Cooperatives Service et al. 1980).

DETERMINING SOCIAL VALUES AND PUBLIC ATTITUDES

Information on social values and public attitudes relating to resource management issues was derived from interviews conducted by the Elko BLM District economist in the summer of 1981. Thirty-five key members of the local economy were

TABLE A5-3

WILDLIFE/RECREATION DAYS FOR THE WELLS RESOURCE AREA

	Current Levels	No Action	Resource Production	Midrange	Resource Protection	Preferred
Upland Birds	17,000	*	*	*	*	*
Waterfowl	1,000	*	*	*	*	*
Rabbits	2,000	*	*	*	*	*
Antelope	100	90	75	135	17,587	135
Deer	11,725	10,553	8,794	15,828	175	15,828
Fish (stream)	5,100	2,550	1,785	3,570	3,825	3,570
Fish (reservior)	4,500	3,375	2,700	3,825	3,825	3,825
Camping	25,000	27,000	30,000	30,000	28,000	30,000
Picnicking	2,500	3,000	4,200	4,200	3,500	4,200
Floatboating	100	200	400	400	400	400

Income

Expenditures x .296 = Income
(.296) = Multiplier - From Fillo et al. (1978)

Employment

Expenditures x .0000419377 = Employment
(.0000419377) = Multiplier - From Fillo et al. (1978)

* Populations are unpredictable. Environmental factors such as weather can significantly affect these species.

Source: BLM and NDOW staffs, Elko, NV.

TABLE A5-5

INTERDEPENDENCE COEFFICIENTS

	Output Multiplier	Direct Employment Coefficient	Employment Multiplier	Households Interdependence Coefficient
Service Station	1.21273	0.000013819	1.22021	0.117573
Eat, Drink & Lodging	1.70637	0.0000682532	1.14352	0.353864
Trade	1.75136	0.0000537437	1.16046	0.472873
Other Services	1.53149	0.0000363097	1.21999	0.242559
Casino	1.48867	0.0000375629	1.15513	0.293355
Average	1.53812	0.0000419377	1.179862	0.296045

Source: Fillo et al. 1978.

TABLE A5-4

RECREATION, VALUES OF HUNTING, FISHING, AND OTHERS
BY ALTERNATIVE (1980 DOLLARS)

Alternative	Expenditures	Personal Income	Employment
Existing Situation	$1,905,200	$563,900	80
No Action	$1,720,500	$509,300	72
Resource Production	$1,332,300	$394,400	56
Midrange & Preferred	$2,494,200	$738,300	104
Resource Protection	$2,813,400	$832,800	118

Source: Bureau of Land Management 1982b

interviewed. The interviews were not assumed to be fully representative of the views of every member of the affected communities. Efforts were made to obtain comments from people who were in knowledgeable positions and who were aware of land use planning issues.

Further data for this analysis was obtained from various publications including environmental impact statements, BLM planning area analysis, and newspaper articles. Data was also collected from informal communications with city and county officials, the RMP scoping responses, from BLM resource specialists, and BLM district files.

CONSUMER PRICE INDICES

Consumer price indices (Table A5-6) are used to adjust for inflation. For example, the value for a 1975 dollar can be adjusted to 1980 dollars by a simple ratio of consumer price indices:

$$\frac{246.8 \text{ (1980 prices)}}{161.2 \text{ (1975 prices)}} = 1.53 \times 1975 \text{ dollars} = 1980 \text{ dollars.}$$

This type of inflation adjustment was utilized in several instances throughout the economic analysis of the RMP.

TABLE A5-6

CONSUMER PRICE INDICES

	Consumer Price Index		Prices Received by Farmers
	All Items	Energy	Livestock and Products
1967	100.0	100.0	100.0
1968	104.2	101.5	104.0
1969	109.8	104.2	117.0
1970	116.3	107.0	118.0
1971	121.3	111.2	118.0
1972	125.3	114.3	136.0
1973	133.1	123.5	183.0
1974	147.7	159.7	165.0
1975	161.2	176.6	172.0
1976	170.5	189.3	177.0
1977	181.5	207.3	175.0
1978	195.4	220.4	217.0
1979	217.4	275.9	257.0
1980	246.8	361.1	251.8
1981	272.4	410.0	248.3

Source: Council of Economic Advisors 1982.

APPENDIX 6

COMMON AND SCIENTIFIC NAMES OF PLANTS
OF THE WELLS RESOURCE AREA USED IN THIS DOCUMENT

GRASSES	
Salt grass	*Distichlis spicata*
Basin wildrye	*Elymus cinereus*
Crested wheatgrass	*Agropyron cristatum*
Idaho fescue	*Festuca idahoensis*
Galleta	*Hilaria jamesii*
Bluebunch wheatgrass	*Agropyron spicatum*
Squirreltail	*Sitanion hystrix*
Cheatgrass (Downy brome)	*Bromus tectorum*
Bluegrass	*Poa* spp.
Foxtails	*Hordeum* spp.
Indian ricegrass	*Oryzopsis hymenoides*
Mountain brome	*Bromus carinatus*
GRAMINOIDS	
Rushes	*Juncus* spp.
Sedges	*Carex* spp.
TREES	
Willows	*Salix* spp.
White fir	*Abies concolor*
Bristlecone pine	*Pinus longaeva*
Limber pine	*Pinus flexilis*
Pinyon pine	*Pinus monophylla*
Utah juniper	*Juniperus osteosperma*
Aspen	*Populus tremuloides*
Engelmann spruce	*Picea engelmannii*
Whitebark pine	*Pinus albicaulis*
SHRUBS	
Big sagebrush	*Artemisia tridentata*
Basin big sagebrush	*Artemisia tridentata* ssp. *tridentata*
Wyoming big sagebrush	*Artemisia tridentata* ssp. *wyomingensis*
Mountain big sagebrush	*Artemisia tridentata* ssp. *vaseyana*
Little rabbitbrush	*Chrysothamnus viscidiflorus*
Rubber rabbitbrush	*Chrysothamnus nauseosus*
Horsebrush	*Tetradymia* spp.
Wood's rose	*Rosa woodsii*
Black greasewood	*Sarcobatus vermiculatus*
Low sagebrush	*Artemisia arbuscula*
Black sagebrush	*Artemisia nova*
Snowberry	*Symphoricarpos albus*
Serviceberry	*Amelanchier utahensis*
Bitterbrush	*Purshia tridentata*
Curlleaf mountain mahogany	*Cercocarpus ledifolius*
Blue elderberry	*Sambucus cerulea*
Common chokecherry	*Prunus virginiana*
Shadscale	*Atriplex confertifolia*
Nuttall's saltbush	*Atriplex nuttallii*
Four-wing saltbush	*Atriplex canescens*
Winterfat (white sage)	*Ceratoides lanata*
Bud sagebrush	*Artemisia spinescens*
Mormon tea	*Ephedra nevadensis, viridis*
Spiny hopsage	*Atriplex spinosa*
Cliffrose	*Cowania mexicana*
Green molly	*Kochia americana*
Iodine bush	*Allenrolfea occidentalis*
FORBS	
Beard tongues	*Penstemon* spp.
Northern mule's ears	*Wyethia amplexicaulis*
Arrowleaf balsamroot	*Balsamorhiza sagittata*
Lupine	*Lupinus* spp.
Halogeton	*Halogeton glomeratus*
Tansymustard	*Descurainia* spp.
Russian thistle	*Salsola iberica*
Clasping pepperweed	*Lepidium perfoliatum*
Pigweed	*Amaranthus* spp.

GLOSSARY

ACTIVE PREFERENCE: The total number of AUMs that can be licensed.

AGRICULTURAL ENTRY: An allowed application that permits an individual to enter upon and develop public lands for irrigated agriculture, completion of which entitles that individual to the lands's title.

ALLOTMENT: An area allocated for the use of the livestock of one or more qualified grazing permittees which includes prescribed numbers and kinds of livestock under one plan of management.

ALLOTMENT MANAGEMENT PLAN (AMP): A documented program which applies to livestock operations on the public lands, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: 1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for the public lands through land use planning; 2) describes the type, location, ownership, and general specifications for the range improvements to be installed and maintained on the public lands to meet the livestock grazing and other objectives of land management; and 3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ALLUVIAL FAN: A fan-shaped deposit of stream wash materials made where the stream runs out onto a level plain.

ANIMAL UNIT (AU): One mature (1,000-lb) cow or its equivalent (4 deer, 5 antelope, 5 bighorn sheep, 1.25 elk, or 1 horse) based upon an average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM): The amount of forage necessary for the sustenance of one cow or its equivalent for one month.

ANGLER DAY: One fisherman spending 12 hours fishing in BLM waters or 12 fishermen spending 1 hour each, or any combination of these.

AQUATIC: Living or growing in or on a stream or other water body or source.

BROWSE: That part of the current leaf and twig growth of shrubs, woody vines and trees available for animal consumption.

CARRYING CAPACITY: An estimate of the maximum number of animals (expressed in AUMs) a given area can support each year without inducing damage to the vegetation or related resources.

CHAINING: The process of knocking over, for the purpose of extirpating, pinyon and juniper trees and sagebrush by means of dragging an anchor chain between two large caterpillar tractors.

CHERRYSTEM ROAD: Dead end road which forms part of the boundary of a WSA.

CLIMAX: The highest and most stable stage of ecological development of a biotic community capable of perpetuation under the prevailing climate and soil conditions when undisturbed by outside forces.

CORRIDOR: A passageway through which all utility transmission (powerlines, gas pipelines, etc.) and transportation (roads, railroads) facilities, both existing and proposed, are located.

CRITICAL GROWTH PERIOD: The period in a plant's growth cycle when food reserves are lowest and grazing is most harmful; for example, in grass species this period begins with the boot (prebud stage) and closes with complete maturation of the fruit.

CRITICAL HABITAT: Any or all habitat element(s), the loss of which, would appreciably decrease the likelihood of the survival and recovery of an officially listed species. It may represent any portion of the present habitat of an officially listed species and may include additional areas for population expansion. The official determination of critical habitat is the responsibility of the USFWS, and takes appropriate Federal Register notification and action.

CRUCIAL HABITAT (Range): Habitat on which a species depends for survival; there are no alternative ranges or habitats available. May also be called "key range or habitat."

CULTURAL RESOURCES: Those fragile and nonrenew-

able remains of human activity, occupation, or endeavor, reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works or art, architecture, and natural features, that were of importance in human events. These resources consist of (1) physical remains, (2) areas where significant human events occurred — even though evidence of the event no longer remains, and (3) the environment immediately surrounding the resource.

ECOSYSTEM: Collectively, all populations in a community, plus the associated environmental factors.

EROSION: Detachment and movement of soil or rock fragments by water, wind, ice, or gravity.

ESSENTIAL HABITAT: Any or all habitat element(s) that possess the same characteristics as critical habitat, but which has not yet been officially designated. It is the responsibility of each Federal agency to conduct the appropriate studies and to provide the biological information necessary to delineate essential habitat.

FORAGE: All browse and herbaceous foods that are available to grazing animals. It may be grazed or harvested for feeding.

FORAGE CONDITION: The proportion of preferred, desirable, and undesirable plant species based upon the forage preference or palatability displayed by a specific livestock or wildlife species.

FORB: A nongrass seed-producing plant that does not develop persistent woody tissue.

GRAZING PREFERENCE: The total number (active and suspended nonuse) of animal unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee.

GRAZING SYSTEM: A systematic sequence of grazing treatments applied to an allotment to reach identified multiple-use goals or objectives by improving the quality and quantity of the vegetation.

GRAZING TREATMENT: A prescription under a grazing system which grazes or rests a unit of land at particular times each year to attain specific vegetation goals.

GREEN-UP: When plants start producing new growth.

GROSS RANCH INCOME: Is equal to gross sales for an individual ranch or group of ranches.

HABITAT: Place where an animal or plant normally lives, often characterized by a dominant and co-dominant plant form (e.g. pinyon-juniper habitat).

HABITAT CONDITION (BIG GAME): The condition of seasonal habitat(s) as they relate to the habitat needs of a particular big game species. Habitat components include such factors as browse vigor rating, forage quality, cover factors, human interference and water distribution for mule deer and water distribution vegetation quality and quantity and vegetation height for antelope. These habitat components are evaluated independently and are somewhat related to but are not the same as existing or potential range condition.

HABITAT MANAGEMENT PLAN: A written and officially approved plan for a specific geographic area which identifies wildlife habitat and related objectives, establishes the sequence of actions for achieving objectives, and outlines procedures for evaluating accomplishments.

HUNTER DAY: One hunter spending 12 hours hunting on BLM land, or 12 hunters spending 1 hour each, or any combination of these.

IMPROPER UTILIZATION: Grazing of the vegetation resource at levels other than those recommended in the 1981 Nevada Range Studies Task group monitoring Procedures. Includes overutilization, underutilization, and inefficient distribution of grazing.

INCOME MULTIPLIER: An indicator of how much income is stimulated in the economy of a region by an economic sector above and beyond the initial income produced by a sector.

INTENSIVE MANAGEMENT: Managing a vegetation or other resource through a system to obtain desired results.

KEY FORAGE AND BROWSE SPECIES: (1) Forage species whose use serves as an indicator to the degree of use of associated species; (2) those species which must, because of their importance, be considered in the management program.

LICENSED USE: Active use AUMs that a permittee

has paid for during a given grazing period.

LIMITED DESIGNATION: Areas on public lands where the use of motor vehicles may be limited. Examples of limitations can include time of year restrictions or use on existing or designated roads and trails.

LOCATABLE MINERAL: A mineral subject to location under the 1872 mining laws. Examples of such minerals would be gold, silver, copper, and lead as compared to oil and natural gas, which are leasable minerals.

LONG-TERM: A point in time from seven to 20 years following the beginning of the implementation phase (1984) for the RMP.

MINERAL POTENTIALS: High Potential - High potential is assigned to areas that contain or are extensions of active or inactive properties which show evidence of ore, mineralization, and favorable geologic characteristics. All producing properties fall within this category.
Good Potential - Good potential is assigned to areas with several geologic characteristics indicative of mineralization, relatively lower, economic value of past production, and similar environments but at greater distance from known ore and mineral occurrences. This category may include areas adjacent to known districts or in mineral belts.
Low Potential - Low potential is assigned to areas that are outside any construed favorable geologic and mineral trend projections or are buried by over 1,500 meters of alluvium (except oil and gas).

MULTIPLE-USE: The management of public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.

MULTIPLIER EFFECTS: The individual effects which spread throughout an economy as the result of a one unit change in an element of a sector directly impacted by an action, e.g., an income multiplier of 2.1021 for the meat animals and poultry sector means that for a $1 change in income within the sector the overall impact on the economy will be a change in income of $2.10. The indirect effect is the total impact ($2.10) minus the direct impact ($1.00) resulting in an indirect effect of ($1.10).

NET RANCH INCOME: Computed by deducting total cash costs and the value of family labor from gross livestock income.

OFF-ROAD VEHICLE: "Off-Road Vehicle" means any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) Any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used in times of national defense emergencies.

OPEN DESIGNATION: Areas on public lands where motor vehicles may be operated, subject only to standard operating regulations.

PERMITTEE: One who holds a permit to graze livestock on public land.

PHENOLOGY: The study of periodic biological phenomenon such as flowering, breeding, as correlated with season and weather.

PIEDMONT: A plateau-like plain lying at the base of a mountain range.

PLANNING CORRIDOR: A 5 mile wide passage on which no existing transportation utility facilities exist but for which a future need has been identified.

PLANT VIGOR: The state of health of a plant. The capacity of a plant to respond to growing conditions, to make and store food and to complete the reproductive stages.

POPULATION: All of the individuals belonging to a single species occupying a particular area of space.

PRIORITY A LIMITING FACTORS: Five crucial factors averaged to provide overall fishery habitat condition on a stream. These include: pool to riffle ratio, pool quality, desirable bottom material, bank cover and bank stability.

PRIORITY B LIMITING FACTORS: Those important factors of fishery habitat not used to figure overall condition. These include average depth and width, percent stream shaded at midday, sedi-

mentation, and water temperature.

PUBLIC LAND: Vacant, unappropriated, and unreserved lands which have never left Federal ownership; also, lands in Federal ownership which were obtained by the Government in exchange for public lands or for timber on public lands. Land administered by the Bureau of Land Management.

QUADRAT FREQUENCY METHOD: The use of permanent plots (1000' square) in which measurements or estimates are used to document frequency of key species (rooted in key areas over a period of time.

RANCH BUDGET: An itemized summary of the expenditures and receipts of a ranch operation.

RANGE CONDITION: The present state of vegetation of a range site in relation to the climax plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in the present plant community resemble that of the climax plant community for the site. Range condition is basically an ecological rating of the plant community. Four range condition classes are used to express the degree to which the composition of the present plant community reflects that of the climax: Excellent (76-100%), Good (51-75%), Fair (26-50%) Poor (0-25%).

RANGE IMPROVEMENT: A structure, development, or treatment used to rehabilitate, protect, or improve the public lands to advance range betterment.

RANGELAND MONITORING PROGRAM: A program designed to measure changes in plant composition, ground cover, animal populations, and climatic conditions on the public rangeland. Vegetation studies will be used to monitor changes in rangeland condition and determine the reason for any changes that are occurring. The vegetation studies consist of actual use, utilization, trend, and climatic conditions.

REASONABLE NUMBERS: The long term (10 year) average of big game populations (mule deer, antelope, elk, and bighorn sheep) or the number of individuals historical habitat could support if reintroduction were to occur. These numbers have been cooperatively developed and agreed upon by the Bureau of Land Management and the Nevada Department of Wildlife.

RECREATION AREA OF MANAGEMENT CONCERN: These areas require moderate recreation management to achieve the Bureau's recreation objectives and provide specific recreation opportunities. Recreation investments and management in these areas is the minimum necessary to achieve objectives and provide specific recreation opportunities.

RECREATION OPPORTUNITY SPECTRUM: A continuum used to characterize recreation opportunities in terms of setting, activity, and experience opportunities.

RESOURCE CONFLICT AREA: One of eight smaller areas, within the total resource area, that has similar resource uses and conflicts.

RIPARIAN HABITAT, AQUATIC (STREAMSIDE): Vegetative communities found in association with streams (both perennial and intermittent) lakes, ponds and other open water. This unique habitat, comprising less than 1% of the land area, is crucial to the continued existence of the fish species known to occur in the Elko District. Streamside vegetation maintains high water tables, stablizes stream banks, creates quality fishery habitat and maintains water quality. It is also essential to most terrestrial wildlife species.

RIPARIAN HABITAT, TERRESTRIAL: Vegetative communities found in association with either open water or water close to the surface; includes such habitat features as seeps, springs, small wet meadows, aspen stands and/or other trees and shrubs. This unique habitat is crucial to the continued existence of the majority of the terrestrial wildlife species known to occur in the Elko District. Many species are found nowhere else.

ROAD: Vehicle routes which have been improved and maintained by mechanical means to insure relatively regular and continued use.

SECTORAL MULTIPLIER: The sum of the portions of the dollar that remains within the region's economy at each turnover by sector (source). A sector is present for each type of expenditure such as for recreation, construction, or retail trade.

SEED TRAMPLING: Trampling of disseminated seed into the soil mantle by livestock, wild horses and burros, and wildlife.

SHORT-TERM: The period of time needed to implement management's decisions following the comple-

tion of the EIS, approximately 5 to 7 years.

SPECIAL RECREATION MANAGEMENT AREA: These areas require explicit recreation management to achieve the Bureau's recreation objectives and provide specific recreation opportunities. Special management areas are identified in the RMP, which also defines the management objectives for the area. Major Bureau recreation investments are concentrated in these areas.

SPECIES, CANDIDATE: (1) Designation applied to species not yet officially listed but which are undergoing a status review or are proposed for listing according to Federal Register notices published by the Secretary of the Interior or the Secretary of Commerce or according to comparable state documents published by state officials; (2) applied to species whose populations are consistently small and widely dispersed or whose ranges are restricted to a few localities, such that any appreciable reduction in numbers, habitat, availability, or habitat condition might lead toward extinction; of (3) applied to species whose numbers are declining so rapidly that official listing may become necessary as a conservation measure.

SPECIES, ENDANGERED: An animal or plant whose prospects for survival and reproduction are in immediate jeopardy, and as further defined by The Endangered Species Act of 1973.

SPECIES, SENSITIVE: An animal or plant classified by a state government pursuant to state laws and/or regulations, which is faced with potential extinction throughout all or a significant portion of its range, especially within the respective state.

SPECIES, THREATENED: Any species which is likely to become an endangered species within the forseeable future throughout all or a significant portion of its range, and as further defined by the Endangered Species Act of 197^

SUSTAINED YIELD: The achievement and maintenance in perpetuity of a high level of annual or regular periodic output of the various renewable resources of the public lands consistent with multiple-use.

THRESHOLD: A threshold is a maximum or minimum number, or other parameter, established by somebody or something that will be affected by the impact. Threshold levels may be established to ensure that the analysis identifies an unacceptable level of cumulative impacts.

TREND: The direction of change in range condition or wildlife habitat over a period of time, expressed as upward, static, or downward.

UNDERSTORY: Plants growing beneath the canopy of other plants. Usually refers to grasses, forbs, and low shrubs under a tree or brush canopy.

UTILIZATION: The portion of the current year's forage production that is consumed or destroyed by grazing animals. May refer either to a single species or to the vegetation as a whole.

VEGETATIVE MANIPULATION PROJECTS: Actions taken which alter the existing natural plant communities to achieve the goals of management in a particular area. There are several ways in which vegetation can be altered: (1) with fires; (2) mechanically, which includes chaining, plowing or crushing; (3) chemically; and (4) biologically.

VISITOR DAY: An aggregation of 12 patron hours, where a patron hour is the presence of one or more persons on lands and waters for outdoor recreation purposes for continuous, intermittent, or simultaneous periods aggregating exactly 60 minutes, e.g. one person for one hour, two persons for one-half hour each, or 4 persons for 1/4 hour each.

VISUAL RESOURCE MANAGEMENT (VRM): The planning, design, and implementation of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL RESOURCES: Visible features of the landscape including land, water, vegetation, and animals.

WATERSHED: A total area of land above a given point on a waterway that contributes runoff water to the flow at that point.

WAYS: A vehicle route established and maintained solely by the passage of motor vehicles.

WILDERNESS CHARACTERISTICS: Identified by Congress in the 196' ilderness Act: namely, size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values such as geological, archaeological, historical, ecological, scenic, or other features. It is required that the area possess at least 5,000 acres or more of

contiguous public land or be of a size to make practical its preservation and use in an unimpaired condition; be substantially natural or generally appear to have been affected primarily by the forces of nature with the imprint of man being substantially unnoticeable; and have either outstanding opportunities for solitude or a primitive and unconfined type of recreation. Congress said a wilderness area may have supplemental values, which include ecological, geological, or other features of scientific, educational, scenic, or historical values. However, the presence or absence of supplemental values could not make or eliminate an area for wilderness designation.

WILDERNESS MANAGEMENT POLICY: This policy document prescribes the general objectives, policies, and specific activity guidance applicable to all designated BLM wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

WILDERNESS STUDY AREA (WSA): A roadless area which has been found to have wilderness characteristics.

WILD HORSE HERD AREA: An area for public lands that provides habitat for one or more wild horse herds.

WILD HORSES: All unbranded and unclaimed horses and their progeny that have used public lands on or after December 15, 1971, or that do use these lands as all or part of their habitat.

WILDLIFE HAZARD: Any man-caused use, activity or physical feature placed in the environment which causes significant, unnecessary, or avoidable wildlife mortality.

WILDLIFE HABITAT CONFLICT: Any man-caused land or resource use activity which results in serious reduction in the quality and/or quantity of an important wildlife habitat.

ACRONYMS

ACEC: Area of Critical Environmental Concern
AMP Allotment Management Plan
AU: Animal Unit
AUM: Animal Unit Month
BLM: Bureau of Land Management
CEQ: Council of Environmental Quality
CETA: Comprehensive Employee Training Act
CFR: Code of Federal Regulations
CRMP: Coordinated Resource Management and Planning
EIS: Environmental Impact Statement
ESCS: Economics, Statistics, and Cooperatives Service
FY: Fiscal Year
GEM: Geology, Energy, and Minerals Report
HMP: Habitat Management Plan
MRI: Mineral Resource Inventory
MSA: Management Situation Analysis
NDOW: Nevada Department of Wildlife
NOI: Notice of Intent
NPS: National Park Service
NRS: Nevada Revised Statutes
RA: Resource Area
ORV: Off-Road Vehicle
RAMC: Recreation Area of Management Concern
RCA: Resource Conflict Area
ROWs: Rights-of-ways
RMP: Resource Management Plan
SCORP: Statewide Comprehensive Outdoor Recreation Plan
SRMA: Special Recreation Management Area
T & E: Threatened and Endangered Species
USDA: U.S. Department of Agriculture
USDI: U.S. Department of Interior
USFS: U.S. Forest Service
USFWS: U.S. Fish and Wildlife Service
WSA: Wilderness Study Area

REFERENCES

Anderson, Loren D. 1980. Adjustable wire fences for facilitating big game movement. Tech. Note 343, Bureau of Land Management, Denver, CO. 7 pp.

ARKIS Collaborative. 1975. West Wendover development plan and Tooele County master plan. Redwood City, CA. pp. 17-36.

_____. 1976. Recreation master plan for West Wendover. Redwood City, CA. pp. 1-4.

Armour, Carl L. 1978. Effects of deteriorated range streams on trout. Bureau of Land Management, Boise, ID. 7 pp.

Autenrieth, Robert, William L. Molini, and Clait E. Braun. 1982. Sage grouse management practices. Western States Sage Grouse Committee Tech. Bull. No. 1. Twin Falls, ID. 42 pp.

Ballantyne, Kurtis J. and David C. Jones. 1981. Peregrine falcon habitat inventory, Wells Resource Area, Elko District, Nevada. Bureau of Land Management, Elko, NV. 23 pp.

Barger, Roland L. and Peter F. Ffolliott. 1972. Physical characteristics and utilization of major woodland tree species in Arizona. Forest Service Research Paper RM-83. Rocky Mountain Forest and Range Exp. Stn., Ft. Collins, CO. 80 pp.

Barrette, Brian, Bob Long, and Carl Cahill. 1971. The market for fence posts in Nevada and eastern California. California Div. of Forestry, Sacramento, CA and Nevada Div. of Forestry, Carson City, NV. 25 pp.

Beck, Debra L. 1980. Wintering bald eagles in the Wells Resource Area, Elko District, Nevada; 1979-1980. Bureau of Land Management, Elko, NV. 48 pp.

Behnke, R.J., and M. Zarn 1976. Biology and management of threatened and endangered western trouts. Forest Service, Rocky Mountain Forest and Range Exp. Stn., Fort Collins, CO. 45 pp.

_____, and R. F. Raleigh. 1978. Grazing and the riparian zone: Impact and management perspectives, in strategies for protection and management of flood plain wetlands and other riparian ecosystems. Proc. of a symposium. Forest Service, Washington, D.C.

Bowers, W., B. Hosford, A. Oakely, and C. Bond. 1979. Wildlife habitat in managed rangelands - the Great Basin of southeast Oregon, native trout. Forest Service, Pacific Northwest Forest and Range Exp. Stn., Gen. Tech. Rept. PNW-84. Portland, OR. 16 pp.

Braun, Clait E., Jim Britt, and Richard O. Wallestad. 1977. Guidelines for maintenance of sage grouse habitats. Wildl. Soc. Bull. 5(3):99-106.

Bresch, Bert. 1982. Personal communication. Sociologist, Bureau of Land Management, Reno, NV.

Brown, G.W., and J. T. Krygier. 1967. Changing water temperatures in small mountain streams. J. Soil and Water Cons. 22:242-244.

Budy, J.D. and R. O. Meewwig. 1979. Pinyon growth characteristics in the Sweetwater Mountains. Forest Service Research Paper INT-227, Ogden, UT. 26 pp.

Bureau of Economic Analysis, Regional Economic Information System. 1979. Employment by type and broad industrial sources. Reno, NV. unpaged.

_____. 1980a. Personal income by major source. Reno, NV. unpaged.

Bureau of Economic Analysis, Regional Economic Information System. 1980b. Employment by type and broad industrial sources. Reno, NV. unpaged.

Bureau of Land Management. 1970. Species life history and habitat requirements - pronghorn antelope. BLM Tech. Manual Supp. 6601-1, Denver, CO. 30 pp.

_____. 1974. Species life history and habitat requirements - mule deer. BLM Tech. Manual Supp. 6601-6, Denver, CO. 72 pp.

_____. 1975. Effects of livestock grazing on wildlife, watershed, recreation, and other resource values in Nevada, Wash., D.C. 96 pp.

_____. 1977a. Social-economic profile covering Elko county. Reno, NV. unpaged.

_____. 1977b. Socio-economic profile covering Elko, County. Elko, NV. 104 pp.

Bureau of Land Management. 1978. Wilderness inventory handbook: policy, direction, procedures, and guidance for conducting wilderness inventory on the public lands. Wash., D.C. 30 pp.
_____. 1979a. Interim management policy and guidelines for lands under wilderness review. Wash., D.C. 32 pp.
_____. 1979b. Fencing big game ranges - effect of slope. Information Memo. DSC 79-108, Denver CO. 4 pp.
_____. 1980a. Nevada progress report. Reno, NV. pp. 9-28.
_____. 1980b. Visual resource management inventory. Elko, NV. 150 pp.
_____. 1980c. Arizona strip wilderness draft environmental impact statement and suitability report. Arizona State Office, Phoenix, AZ. 118 pp.
_____. 1980d. Recreation opportunity spectrum inventory. Elko, NV. 12 pp.
_____. 1980e. Stream/riparian inventory. Unpubl. Rept., Elko, NV. unpaged.
_____. 1980f. Status report on Lahontan cutthroat within the Elko District. Unpubl. Rept., Elko, NV. unpaged.
_____. 1980g. Wilderness inventory files. Unpubl. Rept., Elko, NV. unpaged.
_____. 1981a. Wilderness management policy. Wash., D.C. 36 pp.
_____. 1981b. A guide to rangeland monitoring and coordinated resource management and planning. Reno, NV. unpaged.
_____. 1981c. Draft manual section 1737 - fencing, instruction memorandum 81-256. Wash.,D.C. 42 pp.
_____. 1981d. Wells Resource Area terrestrial wildlife habitat inventory. Unpubl. Rept. Elko, NV. unpaged.
_____. 1982a. Wilderness study policy: policies, criteria, and guidelines for conducting wilderness studies on the public lands. Wash., D.C. 97 pp.
_____. 1982b. Range condition and trend data, Wells Resource Area. Unpubl. Rept., Elko, NV. unpaged.
_____. 1982c. Tonopah preliminary wilderness recommendations - environmental impact statement (draft). Tonopah, NV. 268 pp.
_____. 1982d. Monitoring studies conducted on W.F. Deer Creek, Frazier Creek, and Tabor Creek. Unpubl. Rept. Elko, NV. unpaged.
_____. 1982e. Economic techniques for estimating resource values and analyzing impacts during BLM wilderness studies. Wash., D.C. 137 pp.
_____. 1982f. Management situation analysis for the Wells Resource Area. Elko, NV. unpaged.
_____. 1982g. Woodland product permits. Unpubl. Rept. Elko, NV. unpaged.
_____. 1983. Wells Resource Area wilderness technical report. Unpubl. Rept., Elko, NV. unpaged.
Bureau of Mines and Geology. 1981. Mineral inventory, Wells Resource Area. Unpubl. Rept., Elko, NV. unpaged.
Bureau of the Census. 1980. Census of pupulation and housing - Nevada. Wash., D.C. p.4.
Calendar, John. 1980. Personal communication. Western Farm Management Company, Reno, NV.
Call, Mayo W. 1974. Habitat requirements and management recommendations for sage grouse. Bureau of Land Management Tech. Note, Denver, CO. 37 pp.
Clary, Warren P., Malchus B. Baker, Jr., Paul F. O'Connell, Thomas N. Johnsen, Jr., and Ralph E. Campbell. 1974. Effects of pinyon-juniper removal on natural resource products in Arizona. Forest Service Research Paper RM-128, Rocky Mountain Forest and Range Exp. Stn., Ft. Collins, CO. 28 pp.
Coffin, Pat. 1982. Personal communication. Fisheries biologist, Nevada Dept. Wildl., Elko, NV.
Cole, Norman J. 1968. Mule deer utilization of rehabilitated Nevada rangelands. M.S. Thesis, Univ. Nevada, Reno. 132 pp.
Council of Economic Advisors. 1982. Economic report of the President. Submitted to Congress. Wash., D.C. 294 pp.
Crispin, Val A. 1981. Stream rehabilitation of the west fork, Deer Creek, NV. Bureau of Land Management, Elko, NV. pp. 69-76.
Cuplin, Paul. 1982. Personal communication. Fisheries Biologist, Bureau of Land Management, Denver, CO.

Dahlem, E.A. 1979. The Mahogany Creek watershed - with and without grazing, pp. 31-34 in Forum - grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Vienna, VA.

Dealy, J.E., D.A. Leckenby, and D.M. Cancannon. 1981. Wildlife habitats in managed rangelands - the Great Basin of southeast Oregon; plant communities and their importance to wildlife. Forest Service, Pacific Northwest Forest and Range Exp. Stn., Gen. Tech. Rept. PNW-120. Portland, OR. 66 pp. Dodge, Douglass. 1982. Personal communication. Outdoor Recreation Planner, Bureau of Land Management, Salt Lake City, UT.

Duff, D.A. 1979. Riparian habitat recovery on Big Creek, Rich County, Utah - a summary of 8 years of study, pp. 91-92 in Forum - grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Vienna, VA.

Eckert, R.E., Jr. 1954. A study of competition between whitesage and halogeton in Nevada. J. Range Manage. 7:223-225.

Economics, Statistics, and Cooperatives Service, U.S.D.A., Division of Agriculture and Resource Economics, U.N.R., and Nevada State Department of Agriculture. 1980. Nevada agricultural statistics. Reno, NV. pp. 7-20.

Ellis, David H., Dwight G. Smith, and Joseph R. Murphy. 1969. Studies on raptor mortality in western Utah. The Great Basin Naturalist 29(3):165-167.

Environmental Protection Agency and Bureau of Land Management. 1979. Livestock grazing management and water quality protection: grazing and water quality. Region 10, Seattle, WA. pp. 21-44.

Erickson, Duane. 1981. Personal communication. Wildlife Biologist, Nevada Dept. of Wildl., Elko, NV.

Falk, Robert. 1980. Personal communication. Federal Land Bank, Reno, NV.

Federal Emergency Management Agency. 1982. Stockpile report to the Congress, October 1981-March 1982. Washington, D.C. 29 pp.

Fillo, Frank D., Hans D. Radtke, and Eugene P. Lewis. 1978. An input-output model of the economy of Humboldt and Lander counties. Nevada Review of Business and Economics. Reno, NV. pp. 15-20.

Fish and Wildlife Service. 1980. Streamside areas - management dividends. FWS/OBS-80/55 Government Printing Office, Wash., D.C. 8 pp.

_____ and National Marine Fisheries Service. 1981. Eastern Oregon anadromous fish habitat restoration project; low stream flows and degraded riparian zone. Portland, OR. pp. 7-10.

Foster, Robert H. 1980. Threatened and endangered plant inventory, Wells Resource Area, Nevada. Bureau of Land Management, Elko, NV. 72 pp.

Forest Service. 1978. Proceedings of the western juniper ecology and management workshop, R.E. Martin, J.E. Dealy, and D.L. Caraher, ed. Forest Service Gen. Tech. Rept. PNW-74, Pacific Northwest Forest and Range Exp. Stn., Portland, OR. 177 pp.

Frei, Milton. 1982. Personal communication. Wild Horse Specialist, Bureau of Land Management, Reno, NV.

Gallizioli, Steve. 1977. Statement, pages 90-96, in Improving fish and wildlife benefits in range management. Proc. of a seminar. Fish and Wildlife Serv., Wash., D.C. 118 pp.

Gee, Kerry. 1982. Unpublished range budget analysis. Colorado State Univ., Ft. Collins, CO. unpaged.

Geoscientific Systems and Consulting. 1980. Nevada air quality and climatological atlas, final report. Bureau of Land Management, Reno, NV. 417 pp.

Gillman, Richard A., John B. Loomis, and Richard G. Walsh. 1981. Wilderness resource economics: recreation use and preservation values. Dept. Economics, Colorado State Univ., Ft. Collins, CO. 107 pp.

Golden, Howard and George K. Tsukamoto. 1980. Potential bighorn sheep habitat in northern Nevada. Nevada Dept. Wildl., Elko, NV. 100 pp.

Goodwin, Victor and Archie Murchie. 1980. History of past use and management precepts and guidelines, pinyon-juniper forest type, Carson-Walker RC&D Area, Western Nevada. Carson City, NV. 151 pp.

Governor's Commission on the Future of Nevada. 1980. Statewide survey. Carson City, NV. unpaged.

Granger, A.E., M.M. Bell, G.C. Simmons, and F. Lee. 1957. Geology and mineral resources of Elko County, Nevada. Nevada Bur. of Mines and Geology Bull. 190 pp.

Great Basin GEM Joint Venture. 1983a. Bluebell/Goshute Peak G-E-M resources area (GRA No. NV-02) technical report. Reno, NV. 56 pp.

Great Basin GEM Joint Venture. 1983b. South Pequop G-E-M resources area (GRA No. NV-01) technical report. Reno, NV. 54 pp.
Hagaan, Rich. 1981. Personal communication. Landscape Architect, Bureau of Land Management, Reno, NV.
Hamilton, Andrew. 1965. A matter of a pinyon. Amer. Forests 71:60-61,74.
Hendee, John C., Robert C. Lucas, and George H. Stanley. 1978. Wilderness management. Forest Service Pub. 1365. Government Printing Office, Wash., D.C. 381 pp.
Holechek, Jerry L., Raul Valdez, Sanford D. Schemnitz, Rex D. Pieper, and Charles A. Davis. 1982. Manipulation of grazing to improve or maintain wildlife habitat. Wildl. Soc. Bull. 10(3):204-210.
Hope, R.A. and R.R. Coats. 1976. Preliminary geologic map of Elko County, Nevada. Geological Survey. Open file map 7-779 on file, Elko Bureau of Land Management, Elko, NV.
Irland, Lloyd C. 1979. Wilderness economics and policy. D.C. Heath and Co., Lexington, MA. 225 pp.
Keller, C., L. Anderson, and P. Tappel. 1978. Fish habitat changes in Summit Creek Idaho, after fencing the riparian area, pp. 46-53 in Forum - grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc. Vienna, VA.
Kerr, Richard. 1979. Mule deer habitat guidelines. Tech. Note 336, Bureau of Land Management, Denver, CO. 61 pp.
Kesting, Joseph E. and Steven J. Susmilch. 1980. Sage grouse strutting ground inventory, Wells Resource Area, Elko District, Nevada. Bureau of Land Management, Elko, NV. 28 pp.
Klebenow, Donald A. 1980. The impacts of grazing systems on wildlife, pages 153-162 in Grazing management systems for southwest rangelands. Proc. of a symposium. Albuquerque, NM.
Krambeer, Curt. 1982. Personal communication. Outdoor Recreation Planner, Bureau of Land Management, Burley, ID.
Lea, George D. 1978. BLM management and policy for riparian/stream ecosystems, pp. 13-15 in Forum - grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Vienna, VA.
Leckenby, Donavin A., Dennis P. Shecky, Carl H. Nells, Richard J. Scherzinger, Ira D. Luman, Wayne Elmore, James C. Lemos, Larry Doughty and Charles E. Trainer. 1982. Wildlife habitats in managed rangelands — the Great Basin of southeastern Oregon, mule deer. Forest Service, Pac. N.W. Forest and Range Exp. Stn. Tech. Rept. PNW-139, Portland, OR. 40 pp.
Mackie, Richard J. 1978. Impacts of grazing on wild ungulates. Presented at N. Amer. Wildl. and Nat. Res. Conf., Phoenix, AZ. 21 pp.
Martin S.C. 1979. Evaluating the impacts of cattle grazing on riparian habitats in the national forests of Arizona and New Mexico, pp. 35-38 , in Forum - grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Vienna, VA.
Mathews, Geoffrey W. and William H. Blackburn. 1982. Draft report, assessment of geology, energy and minerals (GEM) resources, Badlands GRA, Elko County, Nevada. Terradata, Lakewood, CO. 55 pp.
May, B.E. and B. Davis. 1981. Practices for livestock grazing and aquatic habitat protection on western rangelands, pp. 271-278 in Wildlife-livestock relationships symposium: Proceedings 10. J.M. Peek and P.D. Dalke, ed. Univ. of Idaho, Moscow, ID.
McQuivey, Robert P. 1978. The desert bighorn sheep of Nevada. Biol. Bull. 6. Nevada Dept. Fish and Game, Reno, NV. 81 pp.
Meehan, W.R. and W.S. Platts. 1978. Livestock grazing and the aquatic environment. J. Soil and Water Cons. 33(6):274-278.
Meeuwig, R.O. 1979. Growth characteristics of pinyon-juniper stands in the western Great Basin. Forest Service Research Paper INT-238, Ogden, UT. 22 pp.
Meierderk, Jay. 1982. Personal communication. Recreation Planner, Div. of State Parks, Carson City, NV.
Miller, Marcus G. 1981. The vegetative condition of pronghorn antelope habitat of the Wells Resource Area, Elko District, Nevada. Bureau of Land Management, Elko, NV. 13 pp.
Myers, Paul. 1982. Personal communication. Economist, Bureau of Land Management, Reno, NV.
Nawa, Richard. 1978. Foods of wild horses, deer and cattle in the Granite Range, Nevada. Bureau of Land Management, Elko, NV. 23 pp.
Nevada Bureau of Mines and Geology. 1981. Mineral inventory, Wells Resource Area, Elko County, Nevada. Unpubl. Rept., Elko District Bureau of Land Management, Elko, NV. unpaged.

Nevada Department of Taxation. 1981. Sales and use, local school and county option taxes collected. Carson City, NV. Monthly repts.

_____. 1982. Sales and use, local school and county option taxes collected. Carson City, NV. Monthly repts.

Nevada Department of Wildlife. 1977. Wildlife input into the planning system; Currie Planning Unit. Elko, NV. 81 pp.

Nevada Department of Wildlife. 1978. Wildlife input into the planning system: Contact Planning Unit. Elko, NV. 46 pp.

_____. 1980. Mule deer condition report and management conclusion summaries. Mike Hess, ed. Reno, NV. 87 pp.

Nevada Division of State Parks, Department of Conservation and Natural Resources. 1980. Economic impact of outdoor recreation in Nevada. Carson City, NV. pp. 25-28.

_____. 1982. Recreation in Nevada: Statewide comprehensive outdoor recreation plan. 133 pp.

Nevada Employment Security Department. 1980a. Nevada Wage Survey. Carson City, NV. unpaged.

_____. 1980b. Area labor review. Carson City, NV. pp.11-21.

Nevada State Engineer's Office, Division of Water Resources. 1971. Water for Nevada. Carson City, NV. 87 pp.

_____. 1974. Water for Nevada. Carson City, Nv. p.24.

Nevada State Office of Planning Coordination. 1980. Nevada Statistical Abstract. Carson City, NV. pp.5-145.

Oakleaf, Robert J. 1971. The relationship of sage grouse to upland meadows in Nevada. Nev. Dept. Fish and Game, Reno, NV. 64 pp.

Olendorff, Richard R., A. Dean Miller, and Robert N. Lehman. 1981. Suggested practices for raptor protection on powerlines; the state of the art in 1981. Raptor Research Rept. 4. Raptor Research Foundation, Inc., Univ. of Minnesota, St. Paul, MN. 109 pp.

Page, Alan D. and Marcus G. Miller. 1981. Essential wintering bald eagle habitat, Wells Resource Area, Elko District, Nevada. Bureau of Land Management, Elko, NV. 29 pp.

Papez, Nick J. 1976. The Ruby-Butte Deer Herd. Nevada Dept. Fish and Game Biol. Bull. 5. Las Vegas, NV. 61 pp.

Peek, James M. and P.D. Dalke, Editors. 1982. Wildlife-Livestock Relationships Symposium: Proceedings 10. Univ. Idaho Forest, Wildl. and Range Exp. Stn., Moscow, ID. 614 pp.

Platts, W.S. 1978. Livestock grazing and riparian/stream ecosystems-an overview, pp. 39-45 in Forum-grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc., Vienna, VA.

_____. 1981a. Effects of livestock grazing, in Influence of forest and rangeland management on anadromous fish habitat in western North America. Gen. Tech. Rept. PNW-124. 25 pp.

_____. 1981b. Effects of sheep grazing on a riparian stream environment. Forest Service Research Note INT-307, Intermountain Forest and Range Exp. Stn., Ogden, UT. 6 pp.

_____. 1982a. Sheep and cattle grazing strategies on riparian-stream environments, pp. 251-270 in Wildlife-livestock relationships symposium: Proceedings 10, J.M. Peek and P.D. Dalke, eds. Univ. Idaho Forest, Wildl. and Range Exp. Stn., Moscow, ID.

_____. 1982b. Personal communication. Fisheries Biologist, Forest Service, Boise, ID.

_____. 1982c. Vegetation requirements for fisheries habitats in Range Improvement Seminar, Elko, NV., June 22-24, 1982. Forest Service Intermountain Forest and Range Exp. Stn., Boise, ID. 12 pp.

_____, and R.L. Nelson. 1982d. Progress report 3 — livestock-fishery interaction studies, Tabor Creek, Nevada. Forest Service Intermountain Forest and Range Exp. Stn., Boise, ID. 57 pp.

_____. 1982e. Progress report 4 — livestock-fishery interaction studies, Gance Creek, Nevada. Forest Service Intermountain Forest and Range Exp. Stn., Boise, ID. 94 pp.

Porter, Richard D. and Clayton M. White. 1973. The peregrine falcon in Utah, emphasizing ecology and competition with the prairie falcon. Brigham Young Univ. Science Bull. Biological Series 18(1). 74 pp.

Rajala, Jake. 1982. Personal communication. Outdoor Recreation Planner, Bureau of Land Management, Ely, NV.

Salicchi, Ceasar. 1982. Personal communication. Elko County Treasurer, Elko, NV.
Salwasser, Hal. 1980. Pronghorn antelope population and habitat management in the northwestern Great Basin environments. Interstate Antelope Conference Guidelines, Bureau of Land Management, Reno, NV. 63 pp.
Schaffran, Gary. 1982. Personal communication. Chief, Lands, Minerals, and Recreation, Humboldt National Forest, Elko, NV.
Scott, Clyde L. 1982. Personal communications. Executive Director, Nevada Dept. Taxation, Carson City, NV.
Shemnitz, Sanford D., ed. 1980. Wildlife Management Techniques Manual, 4th ed. The Wildlife Society, Wash., D.C. pp. 329-403.
Smith, D.R. 1954. The bighorn sheep in Idaho - its status, life history, and management. Idaho Dept. Fish and Game Bull. No. 1, Boise, ID. 154 pp.
Smith, Raymond M. and Associates. 1971. Elko County general plan. Reno, NV. pp 81-83.
Smith, R.M. 1976. Mineral resources of Elko County, Nevada. Geological Survey Open File Rept. 1956-1976. On file, Elko Bureau of Land Management, Elko, NV. 194 pp.
Smith, Steve. 1982. Personal communication. Outdoor Recreation Planner. Bureau of Land Management, Reno, NV.
Snow, Carol. 1972. Habitat management series for endangered species, American peregrine falcon and arctic peregrine falcon. Rept. No. 1, Bureau of Land Management, Denver, CO. 35 pp.
_____. 1973. Habitat management series for endangered species; southern and northern bald eagles. Rept. No. 5. Tech. Note 171. Bureau of Land Management, Denver, CO. 58 pp.
Soil Conservation Service. 1982. Range - nut crops from Utah rangelands — the pinyon pine. Soil Conservation Service, Salt Lake City, UT. 4 pp.
Spalinger, Donald E. 1980. Vegetation changes on eight selected deer ranges in Nevada over a 15-year period. Bureau of Land Management, Reno, NV. 93 pp.
Stevens, R., B.C. Giunta, K.R. Jorgensen and A.P. Plummer. 1977. Winterfat. Publication No. 77-2, Utah State Division of Wildl. Resources, Ephraim, UT. 41pp.
Stewart, J.H. 1980. Geology of Nevada. Nevada Bureau of Mines. Geol. special pub. #4. Reno, NV. 136 pp.
Thomas, Jack W., Chris Maser, and Jon E. Rodiek. 1980. Wildlife habitats in managed rangelands — the Great Basin of southeastern Oregon, riparian zones. Forest Service, Pac. N.W. Forest and Range Exp. Stn. Tech. Rept. PNW-80, Portland, OR. 17 pp.
Tubor Engineering Co. 1973. Wells, Nevada Comprehensive Plan. Boise, ID. unpaged.
Tueller, P.T. 1966. The management of whitesage Eurotia lanata (Pursh)Moq. in Nevada, in Salt Desert Shrub Symposium, Cedar City, UT.
_____ and A.L. Lesperance. 1970a. Competitive use of Nevada's range forage by livestock and big game. Univ. of Nevada, Reno. pp. 129-138.
_____ and Leslie A. Monroe. 1970b. Management guidelines for selected deer habitats in Nevada. Pub. No. R104, Univ. Nevada, Reno, NV. 185 pp.
University of Nevada, Reno, College of Agriculture. 1974. Economic profile supplement. Reno, NV. pp. 5-15.
Van Poollen, H.W. and J.R. Lacey. 1979. Herbage response to grazing systems and stocking intensities. J. of Range Mgt. 30(4):
Van Velson, R. 1978. Effects of livestock grazing upon rainbow trout in Otter Creek, pp. 53-55 in Forum- grazing and riparian/stream ecosystems, Oliver B. Cope, ed. Trout Unlimited, Inc. 1978.
Wagner, Frederic H. 1978. Livestock grazing and the livestock industry, Ch. 9 in Wildlife and America, H.P. Brokaw, ed. Council on Environmental Quality, Government Printing Office, Wash., D.C. 532 pp.
Walsh, R.G., R.A. Gillman, and J.B. Loomis. 1981. Wilderness resource economics: recreation use and preservation values. Colorado State Univ., Ft. Collins, CO. 27 pp.
Waylan, R. G. 1962. Estimated area of prospective phosphate lands, Nevada (unpubl. memo, U.S. Geological Survey). On file, Elko Bureau of Land Management, Elko, NV. 4 pp.
West, Neil E. and J. Gasto. 1978. Phenology of the aerial portions of shadscale and winterfat in Curlew Valley, Utah. J. Range Manage. 31(1):43-45.
_____. 1981. Successional patterns and productivity potentials of pinyon-juniper ecosystems, in Effects of range management on plant communities, a workshop presented in Las Vegas, NV. 18 pp.

Western Utility Group. 1980. Western Regional Corridor Study. Unpubl. Rept. on file, Elko District, Bureau of Land Management, Elko, NV. unpaged.

Wickersham, Mike. 1982. Personal communication. Area Supervisor, Nevada Dept. Wildl., Elko, NV.

Wilson, Lanny O. 1977. Guidelines and recommendations for design and modification of livestock watering developments to facilitate safe use by wildlife. Tech. Note 305, Bureau of Land Management, Denver, CO. 20 pp.

Winegar, H. 1977. Camp Creek channel fencing - plant, wildlife, soil and water response. Rangeman's Journal 4(1):10-12.

_____. 1980a. Riparian recovery-water resource relationships. Unpubl. Rept. Elko Bureau of Land Management, Elko, NV. 6 pp.

_____. 1980b. Projections for flow augmentation with stream habitat recovery through riparian recovery for Buck Hollow, Bakeoven, and Trout Creeks. Unpubl. Rept. Elko Bureau of Land Management, Elko, NV. unpaged.

Yoakum, Jim. 1980. Habitat management guides for the American pronghorn antelope. Tech. Note 347, Bureau of Land Management, Denver, CO. 77 pp.

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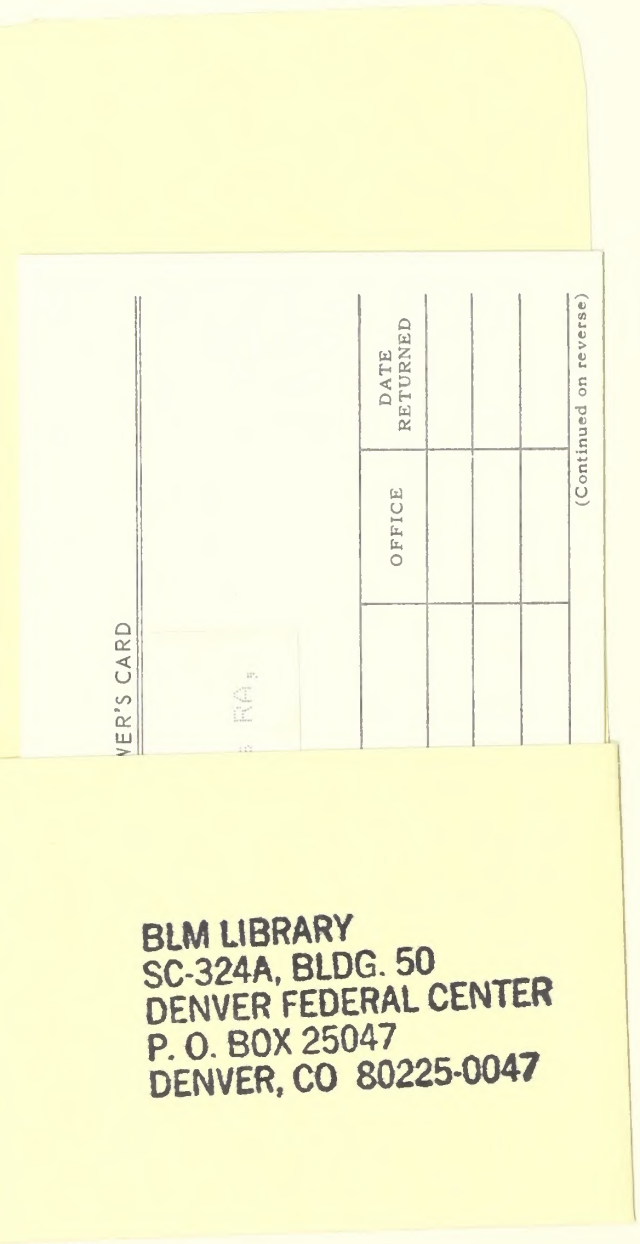

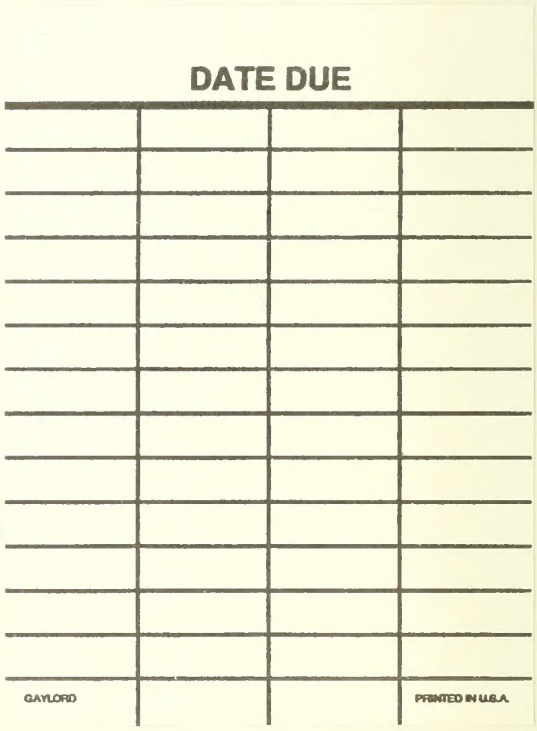

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