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Bureau of Land Management  
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May 1994

# Draft Wilderness Management Plan Thunder Mountain Planning Area



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### *MISSION STATEMENT*

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, wilderness, air and scenic, scientific and cultural values.

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# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Nevada State Office  
850 Harvard Way  
P.O. Box 12000  
Reno, Nevada 89520-0006



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1994

IN REPLY REFER TO:

8500 (NV-046)

MAY 06 1994

Dear Reader:

Enclosed for your review is the draft Wilderness Management Plan for the Thunder Mountain Planning Area, which is administered by the Bureau of Land Management (BLM). The Planning Area includes a portion of the designated Mt. Moriah Wilderness and an adjoining area which has similar resource values and management issues. Bureau policy requires that a management plan be prepared for all designated wilderness areas on public lands. This plan will establish management direction and objectives for the area, as well as a sequence for implementing the identified management actions.

The Planning Area is located within White Pine County, Nevada. Mt. Moriah Wilderness is jointly managed by the BLM and the United States Forest Service. This plan was developed in cooperation with the Humboldt National Forest; however, it will only address management of the BLM-administered portion of the Wilderness. A combined management plan for the entire wilderness area may be prepared at a later date.

Parts I through IV of the draft plan offer background information on wilderness management and the Thunder Mountain Planning Area. Part V is the wilderness management program including the proposed actions needed for achievement of the management objectives.

A 45 day comment period will begin shortly after the mailing of this draft plan. Your written comments will be used in developing the final plan and environmental assessment. An open house meeting to answer any questions and solicit public comment will be held at the Ely District Office from 1:00 to 6:00 pm on May 25, 1994.

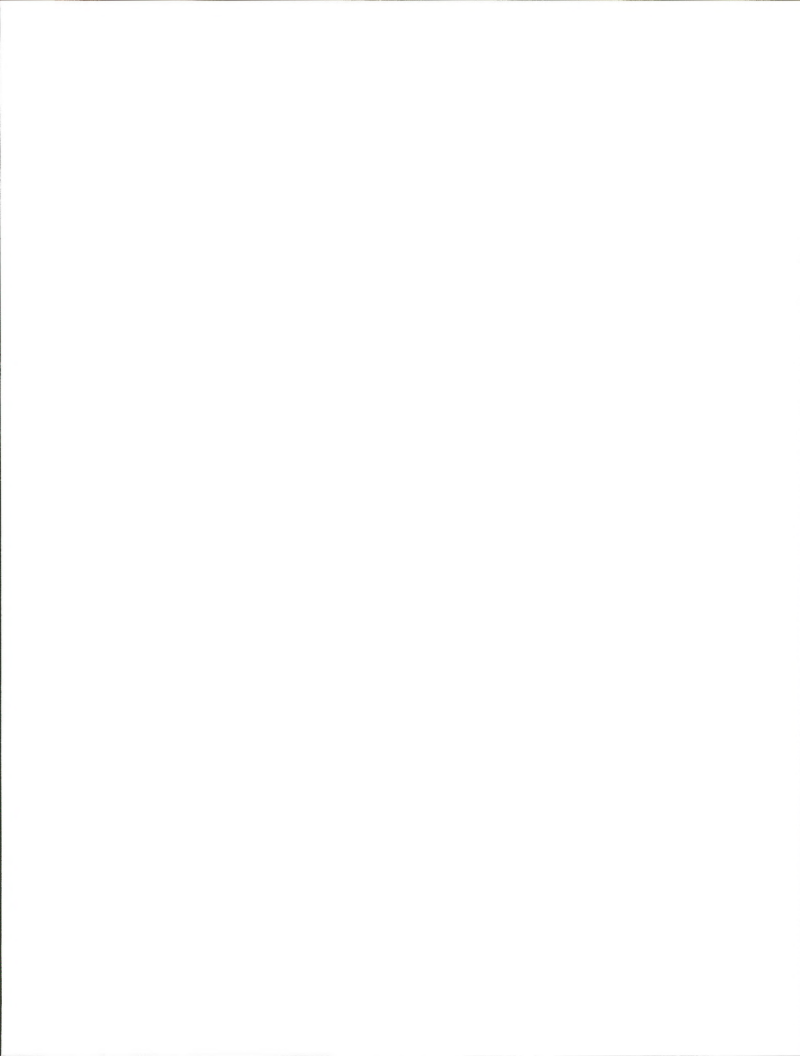
We would appreciate your comments on the management plan. Please send your comments to:

Bureau of Land Management  
Ely District Office  
Attention: Martin Hudson  
HC 33 Box 33500  
Ely, NV 89301-9408

Sincerely yours,

For Billy R. Templeton  
State Director, Nevada

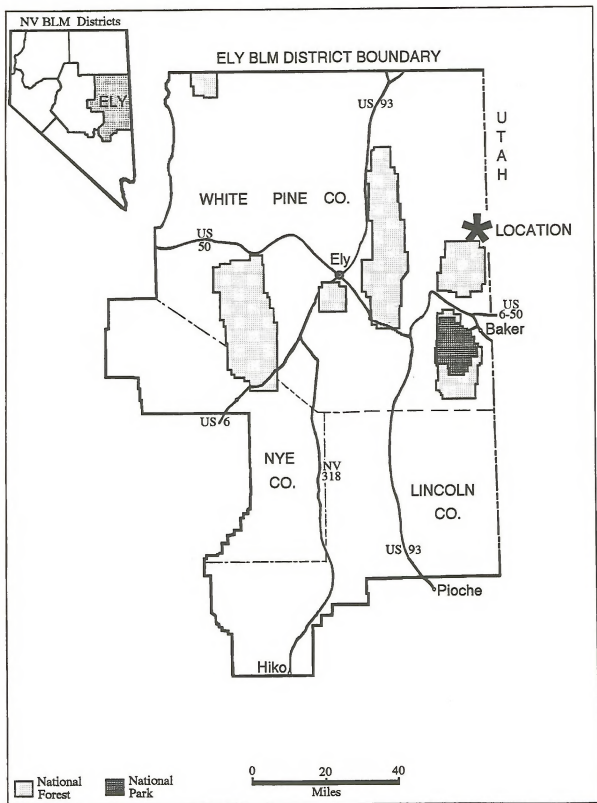
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Map 1 Planning Area Location



## I. SUMMARY

### A. Background

This management plan encompasses the Bureau of Land Management (BLM) portion of the designated Mt. Moriah Wilderness (6,435 acres) and that portion of the BLM Marble Canyon Wilderness Study Area (WSA) that BLM has recommended as suitable for preservation as wilderness (1,865 acres). This consolidated 8,300 acre unit, here named the Thunder Mountain Planning Area, forms a logical planning unit with similar resources, uses and issues.

The Washington BLM headquarters has identified completion of a management plan for the BLM-administered portion of Mt. Moriah Wilderness as a high priority task that cannot be delayed until planning schedules of the two federal agencies that manage this area coincide. The Humboldt National Forest will address the United States Forest Service (USFS) portion of the Mt. Moriah Wilderness in their Forest Management Plan, which will be revised after this BLM plan has been finalized. In the future, a combined BLM and USFS wilderness management plan may be developed that covers both portions of the Mt. Moriah Wilderness.

Many of the potential impacts to wilderness resources, such as occurrence of a catastrophic fire, search and rescue operations or airplane crashes are unlikely to occur during the life of the plan. However, the proposed actions identified in this plan will go into effect in the event these unlikely impacts occur.

### B. Main Features of the Plan

The proposed Plan has two objectives that will be accomplished over the ten-year life of the plan through implementation of specific management actions. Each objective and the management actions needed to implement them are summarized in the following descriptions.

#### Objective 1

**To maintain or enhance the opportunity for solitude, the natural untrammelled appearance of landscapes, and special features within the planning area:**

- Limit the occurrence of low altitude aircraft during

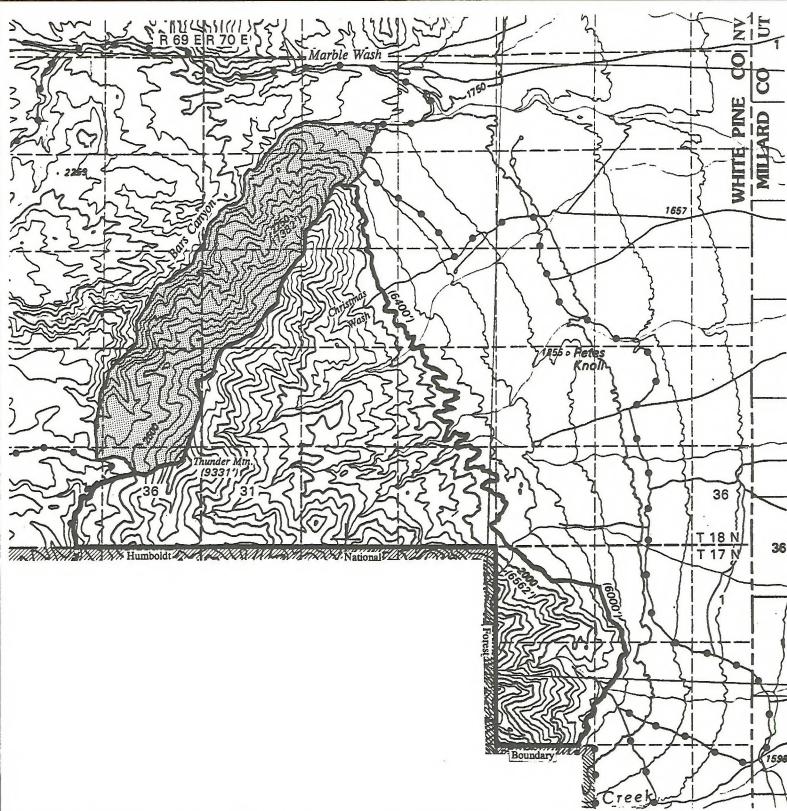
flight operations conducted by BLM, the Nevada Division of Wildlife and by military organizations to improve solitude opportunities.

- Reduce visual impacts created by vehicle use on existing ways by increasing visitor awareness of wilderness ethics through improved signing and educational materials.
- Patrol the area frequently to deter unauthorized vehicle use and wood cutting.
- No vehicles will be authorized inside the planning area unless there is a life-threatening emergency.
- Rehabilitate all surface disturbances resulting from fire suppression, search and rescue operations or other emergency activities within one year of occurrence.
- Allow scientific research using non-motorized and non-mechanized methods.
- Develop public information for the area emphasizing low impact use of wilderness resources, including the care and protection of ancient rock art.
- Quantify reserved water rights for a seep within the area.

#### Objective 2



**To maintain or allow for natural succession to occur within major vegetative communities in the planning area:**

- Adopt a prescribed natural fire management strategy to maintain or prevent the deterioration of vegetation diversity within the area. Fire control will use the minimum tool that would have the least impact to wilderness resources, and any seeding of disturbances will use only native plant species
- Control or eradicate noxious weeds wherever possible.
- Monitor vegetation communities using the best available successional information needed to determine accomplishment of the objective.





Map 2 Planning Area

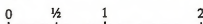
PLANNING AREA BOUNDARY

-  Designated Wilderness portion
-  Recommended Wilderness portion of WSA

LANDS OUTSIDE PLANNING AREA

-  Marble Canyon WSA
-  National Forest

(') Selected Elevations in Feet



Scale in Miles

CONTOUR INTERVAL 50 METERS (164.04 feet)





## II. INTRODUCTION

### A. Purpose of Plan

This plan serves three purposes. First, it presents management issues, objectives and actions that will provide the guidance needed to direct resource protection and uses of the planning area. Second, it sets forth a general sequence for implementing identified management actions. And third, it fulfills the BLM policy requirement that a management plan be prepared for each designated wilderness on public lands. This plan is intended to guide management of the area for the 10-year period, 1994 through 2004.

### B. Planning Area Overview

#### 1. Location

The general location of the planning area is depicted on Map 1. The planning area is located entirely within the Great Basin physiographic region. The area is located at the northern end of the Snake Range west of the Utah-Nevada border in White Pine County, Nevada. It lies completely within unsurveyed Townships 17 and 18 North, Ranges 69 and 70 East, Mount Diablo Meridian (MDM). The southern border of the area is the USFS portion of the Mt. Moriah Wilderness.

The planning area (Map 2) includes the BLM portion of Mt. Moriah Wilderness, and that portion of the Marble Canyon Wilderness Study Area (WSA) that has been recommended by the BLM as suitable for preservation as wilderness. The planning area boundary was designed to include an area with similar management issues. Bars Canyon constitutes a logical, geologic and geomorphic western boundary. The remainder of the WSA was excluded from the planning area because it contains significantly different management issues, including mining and more intensive livestock grazing. The planning area forms a cohesive ecologic unit.

The small community of Baker, located 40 miles to the south, is the closest population center in Nevada. There are other small Utah communities and scattered ranch residences located in the nearby Snake Valley.

## 2. Description

The following briefly characterizes the physical, biotic and historic condition of the planning area.

### Size and Ownership

The entire planning area is public lands under BLM jurisdiction. There are no rights-of-way in the area. The planning area includes the 6,435 acre BLM portion of Mt. Moriah Wilderness and 1,865 contiguous acres within Marble Canyon WSA.

### Climate

Below the 7,500 foot elevation level average annual precipitation ranges from eight to fourteen inches, mean annual air temperature is 44 to 52 degrees Fahrenheit, and average growing season is 100 to 120 days. Above 7,500 feet average precipitation increases to twenty-two inches, air temperature averages 40 to 44 degrees, and the growing season ranges from 50 to 90 days. Most of the annual precipitation is received as snow during winter periods each year, but occasional summer thunder showers do occur.

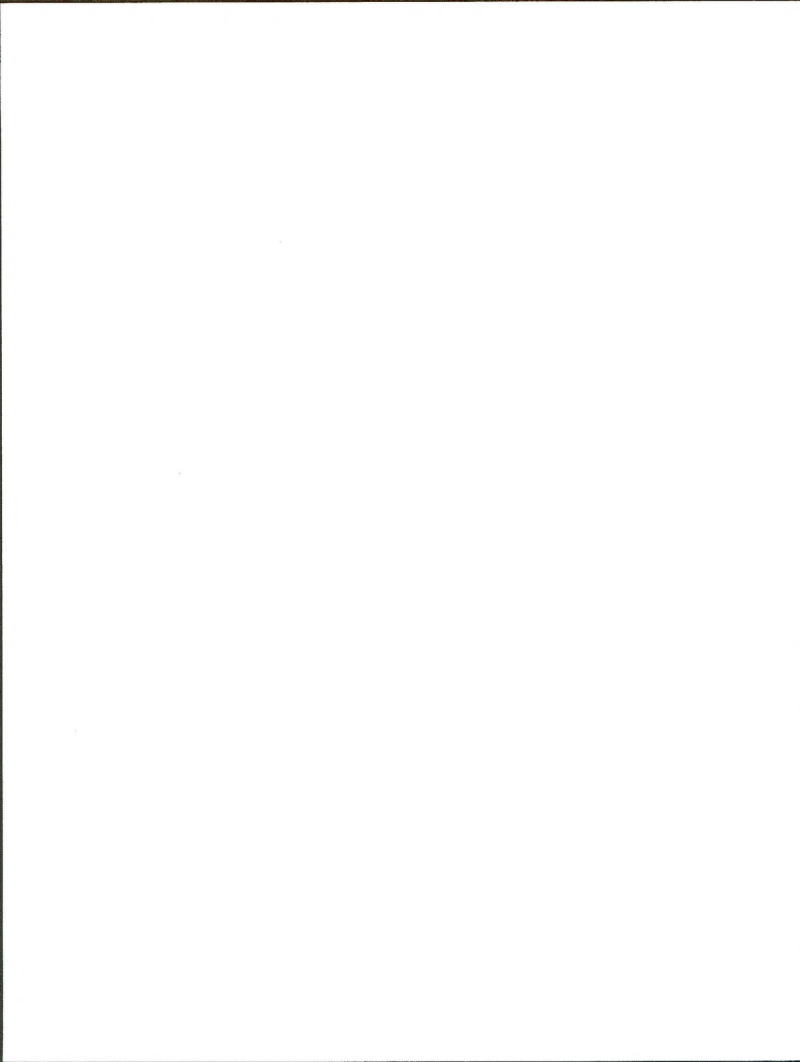
### Topography

Planning area elevation ranges from 6,000 feet near the entrance to Bars Canyon to 9,331 feet at the summit of Thunder Mountain.

The lower eastern portion of the area consists of a small fringe of alluvial fans. West of the alluvial fans the area is characterized by steep and rocky slopes comprised of limestones, shales and quartzites forming the dominant north-south ridge of Thunder Mountain. To the north and west is an impressive major drainage known as Bars Canyon. Some of the walls of Bars Canyon drop nearly 800 feet through impressive limestone and marble formations. The cliffs above Bars Canyon are pocked with shelter caves, expansive ledges and huge natural amphitheatres.

### Wilderness Resources

The area has high quality opportunities for primitive and unconfined recreation and solitude due to the variety of landforms and the low level of human activity. Special features include prehistoric and historic resources, caves, bristlecone pines and



riparian vegetation.

#### Water Resources

One intermittent seep is located in Christmas Wash. Water oozes from a rock ledge at this location and is rapidly absorbed by surrounding soil and riparian vegetation. Another seep has been reported in a drainage on the border of the planning area near the western base of Thunder Mountain. No surface water was evident when this site was visited during September of 1993. This feature is not an important wilderness resource due to its location and ephemeral nature.

#### Minerals

No mining claims or mineral leases exist within the area. The Wilderness portion of the planning area is closed to mineral entry. The WSA portion of the planning area is open to filing of mining claims.

#### Vegetation

Area vegetation is characterized as Great Basin Sagebrush and Pinyon-Juniper woodland ecosystems. Vegetation near the eastern boundary consists of black sagebrush with scattered pinyon and juniper trees. The density of tree cover increases at higher elevations in the western part of the area. The high elevation ridge in the center part of the area supports Douglas fir, white fir, limber pine, bristlecone pine and mountain mahogany.

More detailed technical information concerning vegetation communities is contained in Appendix 1.

#### Fire History

Fire is a natural part of the ecosystem. The natural role of fires can maintain natural conditions, reduce the buildup of ground fuel, create natural fuel breaks and create habitat for wildlife.

Fire occurrence in the planning area is low with one known fire reported during the 1982 to 1993 period. The potential for a large fire occurring in this area is rated as low due to natural barriers and lack of fuel continuity. Fire suppression activities have not significantly changed the natural succession of plant communities. Larger fires are a part of natural plant succession. The risk of man

caused fires is low in this area.

#### Wildlife

Mule deer inhabit the planning area in low numbers primarily because of limited water availability. Rocky Mountain bighorn sheep are found on the USFS portion of the wilderness and may migrate into this area in the winter. Pronghorn antelope are frequently seen on the benchlands surrounding the mountains. Blue grouse, sage grouse and chukar may occur in the area. The area provides excellent nesting habitat for raptors, including golden eagles and prairie falcons.

#### Prehistoric Human Use

Evidence of prehistoric use is limited to several rock art sites and rock shelters. Pictographs (symbols painted on rock surfaces) are present in rock alcoves at three locations within Christmas Wash, and one pictograph site is located in an adjoining drainage to the south. No other archeological sites have been reported within the area. The eastern side of the area has several unnamed canyons. These canyons have not been explored; however, it is assumed they contain evidence of prehistoric human use, based on the occurrences in Christmas Wash.

#### Historic Human Use

Historic human use of the area has been limited. Marble Canyon was named in 1891 when mining claims were established. This area provided a source of marble that was used for grave markers and other purposes. Some prospecting for minerals occurred in the southeastern part of the area near Smith Creek as evidenced by three adits. Information concerning the age of these mining adits is not available. Historically, some fuelwood was harvested on accessible benchlands near Christmas Wash. Unauthorized tree cutting and motorized vehicle use has also occurred infrequently in this same part of the planning area after the Wilderness was designated. Some rubbish consisting of metal cans and bottles is located near the two seeps, and probably was associated with historical attempts to develop water sources.

### Livestock

Portions of the Smith Creek, Muncy Creek and Devils Gate livestock grazing allotments are located within the area. Very little grazing use actually occurs within the planning area due to limited forage, rugged terrain and the scarcity of water sources. Historically, a concrete water trough was developed at the seep in Christmas Wash. This facility has deteriorated to the point that it is no longer useful. There are portions of two fences located in the northern portion of the planning area.

### Recreation

Recreation visits to the planning area are estimated to be less than 25 per year. The majority of estimated recreation use consists of people visiting the rock art in Christmas Wash. Other recreational activities which may occur include sport hunting, rockhounding, and spelunking.

### **3. General Management Situation**

The planning area is managed under two distinct authorities. The Mt. Moriah Wilderness was designated as wilderness by the Nevada Wilderness Protection Act of 1989. This area is managed under authority of The Wilderness Act of 1964, the Nevada Wilderness Protection Act of 1989 and BLM's 8560 Manual, Management of Designated Wilderness Areas.

The planning area west of the wilderness is part of the larger Marble Canyon WSA. This part of the planning area is managed under the Bureau's 8550 Manual, Interim Management Policy and Guidelines for Land Under Wilderness Review (IMP). As previously discussed, the recommended suitable portion of WSA was included because of management issues similar to the Wilderness and to create a logical ecological unit. Including this part of the WSA in the plan is in no way an attempt to increase the size of or effect of the wilderness nor will the WSA be managed under the more restrictive rules that apply to Wilderness.

### **III. WILDERNESS MANAGEMENT GOALS**

The following National Goals apply to all BLM wilderness areas;

1. To provide for the long term protection and preservation of the area's wilderness character under a principle of nondegradation. The area's natural condition, opportunities for solitude, opportunities for primitive and unconfined types of recreation, and any ecological, geological, or other features of scientific, educational, scenic, or historical value present will be managed so that they will remain unimpaired.
2. To manage the wilderness area for the use and enjoyment of visitors in a manner that will leave the area unimpaired for future use and enjoyment as wilderness. The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use.
3. To manage the area using the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently. Management will seek to preserve spontaneity of use and as much freedom from regulation as possible.
4. To manage nonconforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character. Nonconforming uses are the exception rather than the rule; therefore, emphasis is placed on maintaining wilderness character.

### **IV. ISSUES**

Those individuals and groups of people known to share an interest in the management of the Mt. Moriah Wilderness were contacted early during the development of this draft wilderness management plan. Their participation and comments were requested for preparation of this document. The issues identified below reflect the issues and concerns that were identified through internal agency and external public scoping. The final

wilderness management plan will incorporate the input received as a result of this draft review.

#### A. Issues to be addressed further in the plan

##### 1. Long-Term Protection of Naturalness

All uses of the planning area are managed with the underlying principles that naturalness will be protected and enhanced. To ensure this, the following questions will be answered:

- What existing human impacts will be removed or rehabilitated to improve naturalness?
- What fire suppression techniques will be used to minimize impacts on naturalness?

##### 2. Long-Term Protection of Opportunities for Solitude

All activities in the planning area are managed with the underlying principles that the opportunities for solitude will be preserved.

- To ensure this, how will aircraft use be managed?

##### 3. Management of Special Features

The planning area has special features including bristlecone pine, archaeological resources, and seeps.

- How will these features be managed?

##### 4. Management of Vegetation

Many of BLM's programs will affect the vegetation. Programs will be managed to help attain vegetative objectives. Decisions will be made to answer the following questions:

- What plant communities are desired throughout the planning area and how will they be managed?
- How will fires shape vegetative communities?

#### B. Issues Addressed Through Policy or Administrative Action

##### 1. Scientific Data Collection and Research

Scientific data such as tree ring samples, studying

wood rat middens, and soil survey data may be collected under existing authority. Collecting this data will not require the use of motorized or mechanized equipment and will not impact the areas values.

##### 2. Historic Elk Range

There are currently no plans to transplant elk into the area. If elk populations from adjacent areas expand into the planning area, the elk will be managed in cooperation with Nevada Division of Wildlife (NDOW) under existing regulations and policy. No additional guidance is needed.

##### 3. Animal Damage Control

The planning area is outside any identified animal damage control areas. If emergency control actions are needed, they can be authorized in a manner that will not impact the areas values.

##### 4. Rocky Mountain Bighorn Sheep

There are less than 30 Rocky Mountain Bighorn sheep in the Snake Range and bighorn use within the planning area is minimal. If the population increases, either naturally or through transplant efforts, the sheep would be managed in cooperation with NDOW under existing regulations and policy. No additional guidance is needed here.

##### 5. Management of Point Source Pollution

The Clean Air Act designated wilderness areas as Class II for air quality. This allows moderate deterioration of the airshed. There are several Class II airsheds in the region including Mt. Moriah Wilderness and Great Basin National Park. Expected future management actions such as fire management would be in conformance with this Class II standard.

##### 6. Potential Increase in Visitor Use

Current recreation use is estimated to be less than 25 visits annually. Significant increase in recreation use during the life of the plan is not anticipated, however, an increase in use is not expected to adversely affect the area's values.

##### 7. Emergency Services, Including Military Aircraft Disasters

Search and rescue activities are guided by existing policy. In the unlikely event of an emergency, the Bureau will assume a supportive role to the White Pine County Sheriff's Department and the White Pine County Emergency Posse. Emergency response to military aircraft disasters will be coordinated between the Ely District BLM and the military.

#### 8. Outfitter and Guide Activities

Outfitter and guide activities have caused no impacts in the area. This is not expected to change during the life of the plan.

#### 9. Coordinated Management and Planning for the USFS-Administered Portion of Mt. Moriah Wilderness

The Humboldt National Forest is planning to revise the Forest Plan which includes the USFS portion of the wilderness. The Bureau intends to participate with the USFS in the development of an interagency wilderness management plan for the entire Mt. Moriah Wilderness.

#### 10. Threatened, Endangered, or Candidate Species

Bald eagles and peregrine falcons, federally listed endangered species, may occur in the planning area; however, no critical habitat has been identified. These species will be managed under existing policy. No other listed or candidate plant and animal species have been identified within the area.

#### 11. Traditional Cultural Values

There are no known specific sites or areas of contemporary traditional cultural practices by American Indians, ranching, mining or recreational users. If any such areas or sites are identified, they will be managed to allow access without impairing wilderness values.

#### 12. Cave Management and Speleological Resources

There are no known significant caves located within the planning area. If caves or speleological resources are discovered they will be managed under existing regulations and policy.

### C. Issues Beyond Scope of the Plan

No issues beyond the scope of the plan were identified as a result of public scoping or interdisciplinary team efforts.

### V. MANAGEMENT DIRECTION

#### Objective 1.

**Maintain or enhance the opportunity for solitude, the natural untrammelled appearance of landscapes, and special features within the planning area by:**

- minimizing low-level aircraft use within the planning area by 1995.
- remove garbage by 1995.
- allowing the visual impacts of mine adits T. 17 N., R. 70 E., sec. 10, MDM and a concrete trough in Christmas Wash T. 18 N., R. 70 E., sec. 20, MDM to continue to deteriorate naturally.
- reducing the visual impacts of 1.2 miles of existing ways by 1998.
- reducing unauthorized vehicle use to zero by 1995
- managing archeological resources and bristlecone pines to minimize human impacts while making them available for scientific research and recreational enjoyment.
- eliminating unauthorized tree cutting by 1995.
- minimizing the impacts of fire suppression techniques by 1994.
- protecting an important water source.

Rationale. This objective addresses Management Issues 1, 2, 3 and National Goals 1, 2, 3 and 4.

#### Management Actions:

1. All routine BLM-administered flights over the area shall be at least 2,000 feet above ground level (AGL). The authorized officer may allow lower altitude flights on a case-by-case basis when determined to be necessary.
2. Allow NDOW to conduct big game survey over the area using low level (less than 2,000 feet AGL) aircraft flights twice a year.
3. Negotiate with the military to minimize low level overflights and establish AGL limits by 1995.
4. Remove garbage pile in T. 18 N., R. 69 E., sec.

36. MDM and dispose in an authorized landfill by 1995.

5. Remove any non-historic trash found within the area as soon as it is discovered.

6. Photo document the existing condition of historic mine and water trough sites. Allow sites to revegetate naturally.

Rationale: Natural rehabilitation is desirable because it would not create larger areas of surface disturbance and disrupt the natural rehabilitation that is presently occurring.

7. Improve the information displayed at wilderness access points to reduce or eliminate the occurrence of unauthorized vehicle use.

Rationale: Elimination of unauthorized vehicle use through the installation of barriers and or fences would detract from the areas wilderness qualities. Natural rehabilitation of existing ways appears to be occurring and the placement of barricades may create additional disturbance by vehicles circumnavigating the barriers. Presently, low visitor use does not warrant the use of mechanical methods to eliminate unauthorized vehicle use. Physical barriers may be used as necessary if scheduled monitoring indicates deterioration of existing way rehabilitation.

8. Install wilderness boundary sign at end of road to prevent unauthorized vehicle use on west side of Thunder Mountain by 1994.

9. Install a visitor register along the access way to Christmas Wash to provide information about care of nearby rock art and wilderness etiquette by 1995.

Rationale: This will gather visitor use data and disseminate information on appropriate use of resources such as pictographs. This includes information regarding dispersing potential impacts to vegetation along the way caused by vehicle use at

turnaround locations near the wilderness boundary.

10. Patrol wilderness area monthly, when accessible.

11. Place sign to prevent unauthorized wood cutting in the Christmas Wash area by 1994.

12. No vehicles will be authorized inside the planning area for fire suppression unless there is a life-threatening emergency.

13. Rehabilitate all surface disturbances resulting from fire suppression, search and rescue operations, other emergency activities or unauthorized activities within one year of their occurrence or detection.

14. Allow scientific research inside the planning area using non-motorized and non-mechanized methods.

15. Emphasize low impact use of resources in any public information developed for the planning area.

16. Quantify reserved water rights for the seep located in T. 18 N., R. 70 E., Sec. 20, NE $\frac{1}{4}$ SW $\frac{1}{4}$ , MDM.

Rationale: The Nevada Wilderness Protection Act of 1989 reserved water rights to protect wilderness values. This act requires that action be taken to quantify reserved water rights.

17. Conduct reconnaissance archeological survey of planning area by 1996.

Rationale: Archeological resource base line data is necessary to adequately assure that management is protecting resources.

#### Monitoring:

1. Establish photo points and take photographs of mine sites every other year to determine progress toward natural rehabilitation.

2. Establish photo points and photograph ways every other year to determine progress toward natural rehabilitation.

3. Establish photo points at the wilderness boundary access points along ways and photograph each year to determine if vehicle use is damaging the untrammeled appearance of the wilderness.

4. Photograph the pictographs annually to determine if human-caused or natural deterioration is occurring.

**Objective 2.**

Maintain or allow for natural succession to occur within the major vegetative communities listed below, which are defined by range or woodland sites described as follows:

<u>Range or Woodland Site Name</u>	<u>Seral/Successional Stage</u>
Shallow Calcareous Loam (8-10"PZ)*	Mid to Late
Shallow Calcareous Hill (8-10"PZ)	Late Mid to Late
Loamy (8-10"PZ)	Late Mid to Late
Shallow Calcareous Slope (8-10"PZ)	Late Mid to PNC**
Shallow Calcareous Slope (10-14"PZ)	Late Mid to PNC
Shallow Loam (14" plus PZ)	Late Mid to PNC
Shallow Loam (16" plus PZ)	Late Mid to PNC
Limestone Hill	Late Mid to PNC
Mahogany Savanna	Late to PNC
Calcareous Mountain Ridge	Late Mid to PNC
Calcareous Mahogany Savanna	Late to PNC
Singleleaf Pinyon-Utah Juniper	Mature Woodland***
White Fir-Limber Pine-Bristlecone Pine	Mature Woodland***

\* " denotes inches of water and PZ stands for Precipitation Zone

\*\* PNC - Potential Natural Community: the biotic community which would become established if all successional sequences were completed without interference by man under the present environmental conditions. Natural disturbances are inherent in development. Includes naturalized non-native species.

\*\*\* Successional Stage of woodland development

For detailed information concerning the range or woodland site names and seral/successional stages see Appendix 1.

Rationale: This objective addresses Management Issues 1, 3, 4 and National Goal 1.

This vegetation classification method (developed by the Soil Conservation Service) is widely recognized by the scientific community and was adopted as a standard by the Bureau. The soil survey for the planning area will be completed by the SCS in the summer of 1994. When the soil survey is completed, the successional stage of vegetative communities can then be determined using the Ecological Site Inventory (ESI) method. ESI evaluation provides the best available description of base line vegetative community conditions. This refined data will replace range or woodland site

information in the above table, which was the best available information when this plan was prepared.

Management Actions:

1. Adopt the fire management plan found in Appendix 2.
2. After a fire occurs, form a rehabilitation planning team to determine appropriate rehabilitation measures. Any seeding will use only native species.
3. Develop an interagency agreement between the Bureau and the Forest Service regarding



Prescribed Natural Fire by 1994.

4. Control noxious weed infestations.

Rationale: Noxious weeds are always non-native species, and thus not acceptable in wilderness. Although complete eradication of certain noxious weeds is not practical, the Bureau will take actions to minimize the presence of these species.

5. Complete an Ecological Site Inventory in 1994.

6. Establish quadrat frequency transects in representative areas of major range sites, and canopy cover transects within woodland sites by 1995.

Monitoring:

1. Observe fire behavior of all fires that occur, and evaluate effects of fire and any rehabilitation efforts within first year after fire and periodically thereafter.
2. After initial control of noxious weeds, sites will be visited annually to determine the effect of control. If noxious weeds are still present, additional control measures will be implemented.
3. Read quadrat frequency transects and canopy cover transects every five years to determine if there are changes in vegetation.

**VI. PLAN EVALUATION**

The Bureau will evaluate the effectiveness of plan implementation on an annual basis. This evaluation will be completed prior to preparation of BLM's annual work plan budgetary submission in order to accurately reflect the possibility of changing needs and priorities. Evaluation will include the following:

- Record management actions that have been completed and identify management actions to be completed the following year.
- Analyze monitoring data which has been collected during the year.
- Determine attainment or nonattainment of national goals and management objectives.
- Assess the need to revise the plan.

## VII. PLAN IMPLEMENTATION

Estimated annual expenditures for management of the Mt. Moriah Wilderness will total one work month (about \$3,600 per year) for patrol and monitoring. One time, nonrecurring, costs are estimated at about \$21,000 for special projects (equipment, materials, supplies and contracts and five work months of internal personnel costs). Funding to accomplish these tasks will be requested through BLM's normal budgetary procedures. Specific tasks anticipated for the management of the area are identified in the tables below. Both tables reflect listing in overall priority order. These priorities are subject to availability of funding and possible changes in national wilderness priorities.

Table 1a. Annual Expenditures.

MANAGEMENT ACTION (in priority order)	COSTS \$
Patrol (estimated six visits per year during accesible season)	
Monitoring (Condition of ways, mine adits, pictographs, vegetation study transects)	
<b>Total</b>	<b>3,600</b>

Costs reflect internal personnel costs of approximately one \*workmonth  
\*workmonth=20 days of work for one person currently estimated at \$3,600.

Table 1b. Special Projects.

MANAGEMENT ACTION (in priority order)	Costs \$*
<b>Visitor Information &amp; Signs</b>	
Install two signs at wilderness boundary access points	2,000
Fabricate & install visitor register	
Fabricate & install informational signs at access points	
Prepare & duplicate wilderness ethics brochure	3,000
<b>Intrusion Removal</b>	
Remove garbage (T. 18 N., R. 69 E., Sec. 36, MDM)	nc
<b>Administrative Measures</b>	
Develop Interagency Fire Management Agreement with USFS	1,000
Negotiate with military to reduce overflights	2,000
<b>Data Collection</b>	
Complete Ecological Site Inventory	4,000
Quantify reserved water rights	1,000
Conduct reconnaissance archeological survey	8,000
<b>Totals</b>	<b>21,000</b>

nc = To be completed as part of annual monitoring and patrol activities

\*Costs of \$21,000 reflect about five workmonths of BLM staff salary, overhead and materials procurement costs.

### VIII. LIST OF PREPARERS

This plan was prepared through cooperative efforts of the following interdisciplinary team of resource specialists:

Mike Bunker	Ely District, Outdoor Recreation Planner
Brett Covlin	Schell Resource Area, Range Conservationist
Bill Dunn	Ely District, Fire Mangement Officer
Mark Henderson	Schell Resource Area, Archeologist
Martin Hudson	Schell Resource Area, Outdoor Recreation Planner
Jeff Jarvis	National Wildemess Program Leader
Mike Main	Ely District, Range Conservationist
Paul Podborny	Schell Resource Area, Wildlife Biologist
Harry Rhea	Ely District, Forester
Steve Smith	Nevada State Office, Wildemess Program Leader

Technical expertise in other programs or managerial support during review was provided by:

Mark Barber	Ely District, Wildlife Biologist
Henry Hickerson	USFS Recreation Forester
Paul Lavallee	SCS, Soil Scientist
Gary Medlyn	SCS, Soil Scientist
Jerry Smith	Manager, Schell Resource Area
Jake Rajala	Ely District, Environmental Coordinator
Tim Reuwsaat	Associate District Manager, Ely District
Ken Walker	District Manager, Ely District

## IX. APPENDICES

### Appendix 1 VEGETATION INFORMATION

The vegetation communities in this planning area are more precisely defined by soil mapping units, precipitation zones and range or woodland sites described as follows;

The Shallow Calcareous Loam eight to ten inch precipitation zone (8-10" PZ) plant community is dominated by black sagebrush, Indian ricegrass and needle-and-thread grass. Potential vegetative composition is about 45% grasses, 10% forbs and 45% shrubs.

The Shallow Calcareous Hill (8-10" PZ) plant community is dominated by black sagebrush and Indian ricegrass. The visual aspect of this site is dominated by sparse, scattered stands of Utah juniper. Tree canopy is less than 10 percent. Potential vegetative composition is about 30% grasses, 5% forbs and 65% shrubs.

The Loamy (8-10" PZ) plant community is dominated by Wyoming big sagebrush, Indian ricegrass and needle-and-thread grass. Galleta grass is an important associated species. Potential vegetative composition is about 55% grasses, 5% forbs and 40% shrubs.

The Shallow Calcareous Slope (8-10" PZ) plant community is dominated by black sagebrush, Indian ricegrass and needle-and-thread grass. Potential vegetative composition is about 40% grasses, 5% forbs and 55% shrubs.

The Shallow Calcareous Slope (10-14" PZ) plant community is dominated by black sagebrush, Indian ricegrass and bluebunch wheatgrass. Potential vegetative composition is about 50% grasses, 10% forbs and 40% shrubs and trees.

The Shallow Loam (14" plus PZ) plant community is dominated by bluebunch wheatgrass and mountain big sagebrush dominates. Potential vegetative composition is about 75% grasses, 5% forbs and 20% shrubs.

The Shallow Loam (16" plus PZ) plant community is dominated by bluebunch wheatgrass and mountain big sagebrush. Potential vegetative composition is about 75% grasses, 5% forbs and 20% shrubs.

The Limestone Hill plant community is dominated by littleleaf mountain mahogany. Black sagebrush, Stansbury cliffrose, Nevada greasewood and Scribner needlegrass are important species associated with the site. The potential vegetative composition is about 15% grasses, 10% forbs and 75% shrubs, tree-like shrubs and trees.

In the Mahogany Savanna plant community curleaf mountain mahogany dominates. Mountain big sagebrush is the principal understory shrub, with bluebunch wheatgrass and muttongrass the most prevalent understory grasses. Potential vegetative composition is about 45% grasses, 10% forbs and 20% shrubs and 25% trees and tree-like shrubs.

The Calcareous Mountain Ridge plant community is dominated by bluebunch wheatgrass and black sagebrush. Potential vegetative composition is about 45% grasses, 10% forbs and 45% shrubs.

The Calcareous Mahogany Savanna plant community is dominated by curleaf mountain mahogany. Mountain big sagebrush is the principal understory shrub, with bluebunch wheatgrass, Columbia needlegrass and Letterman needlegrass the most prevalent understory grasses. Potential vegetative composition is about 45% grasses, 10% forbs, 25% shrubs and 20% trees and tree-like shrubs.

The Singleleaf Pinyon-Utah Juniper woodland community contains black sagebrush as the principle understory shrub and bluebunch wheatgrass, Indian ricegrass and bluegrasses are the prevalent understory grasses. The potential vegetative composition of the overstory is 50% to 70% Utah juniper and 30% to 50% singleleaf pinyon. Potential understory vegetative composition is about 35% grasses, 15% forbs and 50% shrubs.

The White Fir-Limber Pine-Bristlecone Pine woodland community contains mountain big sagebrush as the principle understory shrub. Bluebunch wheatgrass and muttongrass are the prevalent understory grasses.

APPENDIX 1 Table a: Common and scientific names of plants frequently found within the planning area.

COMMON PLANT NAME	SCIENTIFIC NAME
<b>GRASSES</b>	
bluebunch wheatgrass	<u>Agropyron spicatum</u>
muttongrass	<u>Poa fendleriana</u>
Indian ricegrass	<u>Oryzopsis hymenoides</u>
needle-and-thread grass	<u>Stipa comata</u>
Columbia needlegrass	<u>Stipa nelsonii</u>
Letterman needlegrass	<u>Stipa letterman</u>
Scribner needlegrass	<u>Stipa scribneri</u>
<b>SHRUBS AND TREES</b>	
black sagebrush	<u>Artemisia arbuscula nova</u>
mountain big sagebrush	<u>Artemisia vasevana</u>
Wyoming big sagebrush	<u>Artemisia tridentata wyomingensis</u>
curlleaf mountain mahogany	<u>Cercocarpus ledifolius</u>
littleleaf mountain mahogany	<u>Cercocarpus intricatus</u>
singleleaf pinyon	<u>Pinus monophylla</u>
Utah juniper	<u>Juniperus osteosperma</u>
limber pine	<u>Pinus flexilis</u>
bristlecone pine	<u>Pinus aristata</u>

Appendix 1 Table b: Seral Stages by Percent Vegetation for Plant Communities

Seral Stage	Percentage of Present Plant Community within the site	Categorization of Seral Stages	Percentage of Present Plant Community within the site
Early	0-25	Early	0-8
		Mid	9-16
		Late	17-25
Mid	26-50	Early	26-34
		Mid	35-42
		Late	43-50
Late	51-75	Early	51-59
		Mid	60-67
		Late	68-75
PNC	76-100		

PNC= Potential Natural Community: As an example, 27 percent of present plant community within a site would be identified as an Early Mid Seral Stage.

APPENDIX 1 Table c: Soil Mapping Units and Range or Woodland Sites (see Figure 1 for locations)

Soil Mapping Unit Number	Percent of Soil Mapping Unit <sup>2</sup>	Range or Woodland Site Name and Number	Common Plant Names
118-1	35	Shallow Calcareous Slope 8-10" PZ <sup>2</sup> 028AY004NV	black sagebrush Indian ricegrass needle-and-thread grass
	30	Shallow Calcareous Hill 8-10" PZ 028AY027NV	Utah juniper black sagebrush Indian ricegrass
	20	Limestone Hill 028AY029NV	littleleaf mountain mahogany Scribner needlegrass
	8	Rock outcrop	
118-2	40	Singleleaf Pinyon-Utah Juniper 028AY074NV	singleleaf pinyon Utah juniper black sagebrush bluebunch wheatgrass Indian ricegrass
	25	Limestone Hill 028AY029NV	littleleaf mountain mahogany Scribner needlegrass
	20	Rock outcrop	
119-1	50	Shallow Calcareous Slope 10-14" PZ 028AY034NV	black sagebrush bluebunch wheatgrass Indian ricegrass
	20	Rock outcrop	
	15	Singleleaf Pinyon-Utah Juniper 028AY074NV	singleleaf pinyon Utah juniper black sagebrush bluebunch wheatgrass Indian ricegrass
122-1	45	Singleleaf Pinyon-Utah Juniper 028AY074NV	singleleaf pinyon Utah juniper black sagebrush bluebunch wheatgrass Indian ricegrass
	20	Shallow Calcareous Slope 10-14" PZ 028AY034NV	black sagebrush bluebunch wheatgrass Indian ricegrass
	20	Rock outcrop	
122-2	40	Shallow Calcareous Loam 8-10" PZ 028AY013NV	black sagebrush Indian ricegrass needle-and-thread grass
	35	Shallow Calcareous Slope 8-10" PZ 028AY004NV	black sagebrush Indian ricegrass needle-and-thread grass
	15	Loamy 8-10" PZ 028AY015NV	Wyoming big sagebrush Indian ricegrass needle-and-thread grass

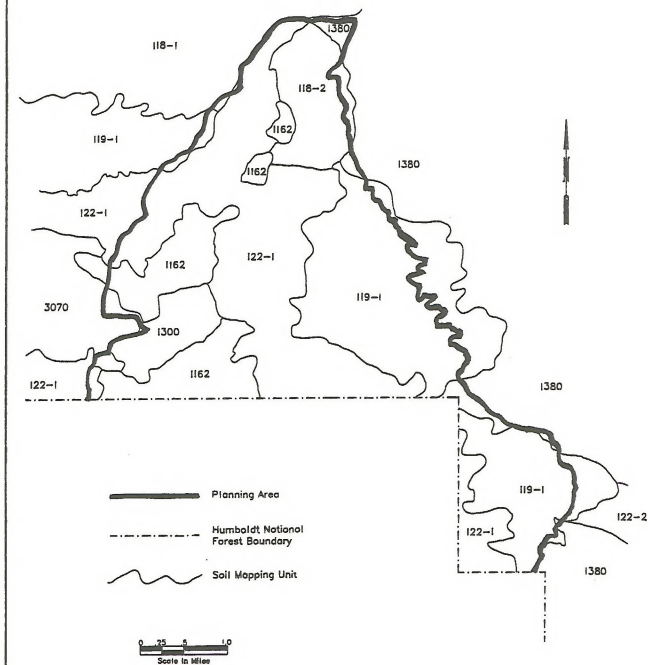
Soil Mapping Unit Number <sup>1</sup>	Percent of Soil Mapping Unit <sup>2</sup>	Range or Woodland Site Name and Number	Common Plant Names
1162	35	Shallow Loam 14+'' PZ 028AY065NV	mountain big sagebrush bluebunch wheatgrass
	30	Mahogany Savanna 028AY059NV	curlleaf mountain mahogany mountain big sagebrush bluebunch wheatgrass muttongrass
	20	White Fir-Limber Pine- Bristlecone Pine 028AY085NV	white fir limber pine bristlecone pine mountain big sagebrush bluebunch wheatgrass muttongrass
1300	40	Mahogany Savanna 028AY059NV	curlleaf mountain mahogany mountain big sagebrush bluebunch wheatgrass muttongrass
	30	White Fir-Limber Pine- Bristlecone Pine 028AY085NV	white fir limber pine bristlecone pine mountain big sagebrush bluebunch wheatgrass muttongrass
	15	Rock outcrop	
1380	90	Shallow Calcareous Loam 8-10'' PZ 028AY013NV	black sagebrush Indian ricegrass needle-and-thread grass
3070	35	Calcareous Mountain Ridge 028BY048NV	black sagebrush bluebunch wheatgrass
	30	Shallow Loam 16+'' PZ 028BY070NV	mountain big sagebrush bluebunch wheatgrass
	20	Calcareous Mahogany Savanna 028BY043NV	curlleaf mountain mahogany mountain big sagebrush bluebunch wheatgrass Columbia needlegrass Letterman needlegrass

<sup>1</sup> Soil Mapping Unit= an area occupied by different kinds of soil which has a unique set of interrelated properties characteristic of material from which it formed, its environment and its history.

<sup>2</sup> The remaining 7% to 15% of any soil mapping unit consists of minor inclusions of range sites.

<sup>3</sup> Symbol '' represents inches, and PZ is abbreviation for Precipitation Zone.

Figure 1  
Soil Mapping Units





## Appendix 2 FIRE MANAGEMENT PLAN

### Steps To Full Suppression

- Using ground or aerial reconnaissance determine the following:
  - Fire location, size, rate-of-spread and fire behavior cause.
  - Current and probable fuels, weather (if possible), topography including natural barriers.
  - Threats to life, property or sensitive wilderness resources.
- Fire aircraft will maintain altitudes of 500 AGL and above. Aircraft will land only if it is deemed as the minimum tool.
- Inform Area Manager of the fire.
- Determine if the fire meets prescription parameters. If so continue to monitor and document fire behavior inputs.
- If the fire does not meet prescription parameters, an Escaped Fire Situation Analysis will be completed. Analysis will be completed by the District Fire Management Officer, Area Manager and Incident Commander (I.C.) or their representative. An escaped fire is determined by the following prescription parameters for the two Fuel Models found within the planning area:

#### Fuel Model 6 (Sagebrush and Pinyon/Juniper)

Flame Length = Over 4 feet

Rate-of-Spread = Over 16 chains per hour

Haines Index (an indicator of atmospheric instability and fire spread potential) = 5 to 6 (look at long range projections)

#### Fuel Model 8 (Mixed Conifer - Closed Canopy)

Flame Length = Over 2 feet with less than 4 mph mid-flame wind speed

Rate-of-Spread = Over 3 chains per hour

Haines Index = 5 to 6 (look at long range projections)

- The minimum tool concept will be implemented for all fires. This means that control methods or tools that have the least impact to wilderness resources will be considered first. The use of mechanized tools will be determined by the I.C. and coordinated with the resource advisor. Fugitive retardant may be used as necessary. Vehicles have limited access in the planning area, however, they will be staged and remain outside except for life threatening emergencies.
- Activities including the use of camps and the development of helispots are unlikely to occur but are not prohibited if they are the minimum tool. Coordination with the resource advisor will be maintained.
- All rehabilitation of disturbances such as fire lines, stumps, camps etc. will be completed prior to demobilization as outlined in the Escaped Fire Situation Analysis.
- All man caused fires will be fully suppressed and all naturally occurring fires will have an appropriate suppression action.
- Monitor fire effects for two consecutive years after a fire, then on an as needed basis, to determine if the fire prescription conforms with wilderness management goals and objectives.

## X. GLOSSARY

### **ecologic unit**

an area of land with an interacting system of organisms and environment.

### **geomorphic**

of or relating to the form of the earth or its surface features.

### **naturalness**

Refers to an area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." One of the qualities described by Congress in the definition of wilderness (see "wilderness characteristics" below).

### **nonconforming use**

Special exceptions in wilderness law related to activities and uses (such as livestock grazing, existing private mineral rights, or water resource development) that are normally prohibited within designated wilderness areas. These exceptions are listed in sections 4(c), 4(d) and 5 of the Wilderness Act of 1964, and may be included in subsequent designation laws.

### **prescribed natural fire**

Fire which is allowed to burn under natural conditions, with specific parameters for fire behavior (rate of spread, flame length, etc.) and which has acceptable identified effects on vegetation.

### **primitive and unconfined recreation**

One of the terms used by Congress in the definition of wilderness (see "wilderness characteristics" below).

### **solitude**

One of the qualities described by Congress in the definition of wilderness (see "wilderness characteristics" below).

### **special features**

As used in this plan this term refers to a portion of the Congressional definition of wilderness which is contained in clause (4), section 2(c) of the Wilderness Act of 1964 (see "wilderness characteristics" below).

### **way**

An existing vehicle route that does not meet the

definition of a road, as used in the IMP. Congress defined the term "roadless" which has been consistently used during BLM's wilderness review program. The following sentence in that definition led to the commonly used term for a way "A way maintained solely by the passage of vehicles does not constitute a road."

### **Wilderness Area**

As used in this plan this term denotes an area formally designated by Congress as part of the National Wilderness Preservation System.

### **wilderness characteristics**

The definition contained in section 2(c) of the Wilderness Act of 1964 (78 Stat. 891): "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, and where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which: (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

### **wilderness resources**

As used in this plan this term means "all of the natural and cultural resource values that occur within the planning area."

### **Wilderness Study Area**

A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 603 of the Federal Land Management and Policy Act and section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

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