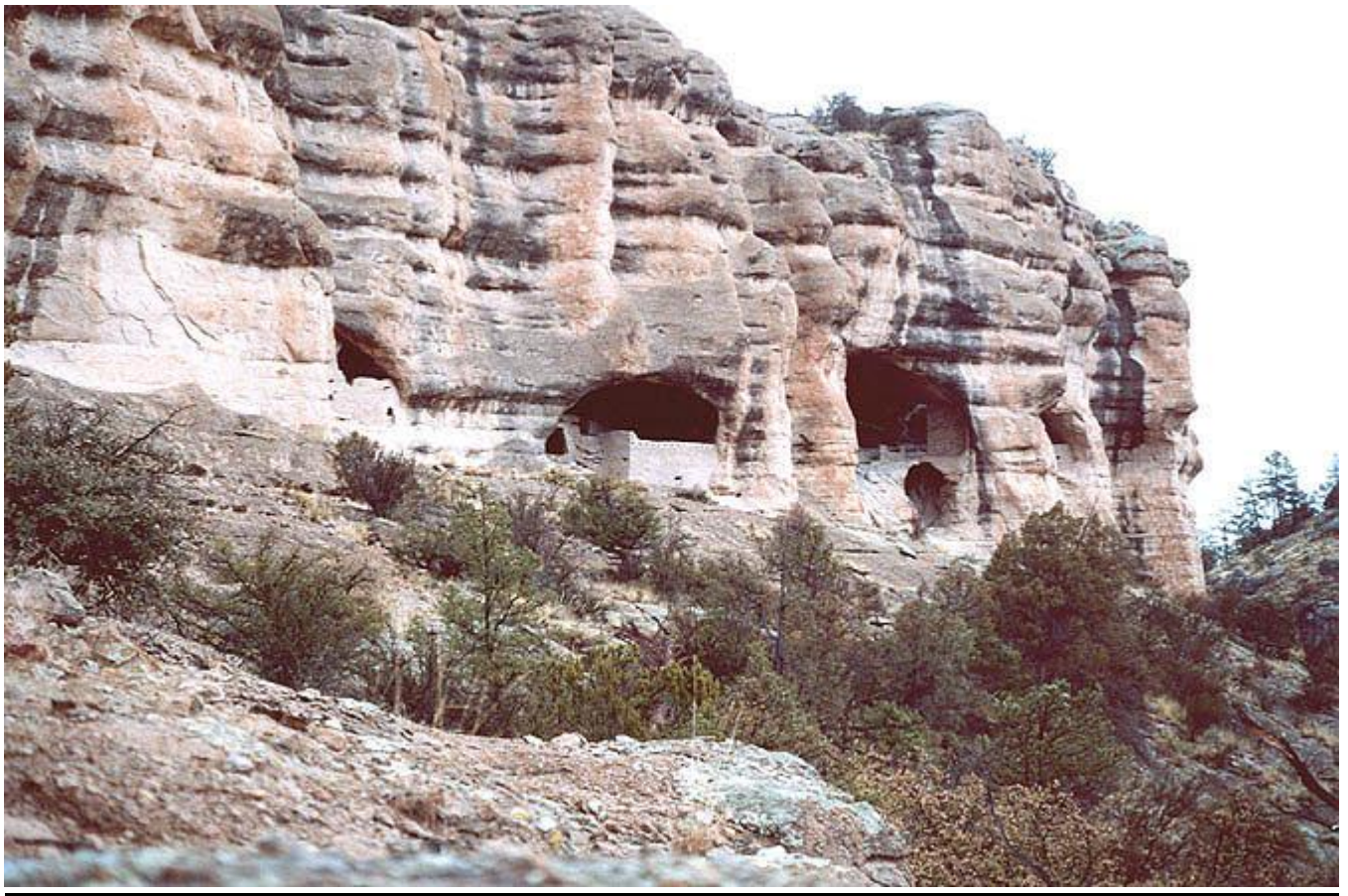


Gila Cliff Dwellings National Monument

Wildland Fire Management Plan



April 2005

FIRE MANAGEMENT PLAN

National Park Service

GILA CLIFF DWELLINGS NATIONAL MONUMENT

NEW MEXICO

April, 2005

Prepared by: Jim McMahon, NPS Area FMO and URS Corporation Date: 03/2005

Approved by:  Date: 4/06/05

Superintendent, Gila Cliff Dwellings National Monument

Approved by: Annette H. S. Date: 4/6/05

District Ranger, Wilderness Ranger District, Gila National Forest

TABLE OF CONTENTS

I.	INTRODUCTION	3
II.	RELATIONSHIP TO LAND MANAGEMENT PLANNING AND FIRE POLICY	6
III.	FIRE MANAGEMENT STRATEGIES	7
IV.	FIRE MANAGEMENT PROGRAM COMPONENTS.....	15
V.	ORGANIZATIONAL AND BUDGETARY PARAMETERS.....	29
VI.	MONITORING AND EVALUATION	31
VII.	FIRE RESEARCH.....	31
VIII.	PUBLIC SAFETY	32
IX.	PUBLIC INFORMATION AND EDUCATION	32
X.	PROTECTION OF SENSITIVE RESOURCES	33
XI.	FIRE CRITIQUES AND ANNUAL PLAN REVIEW.....	34
XII.	CONSULTATION AND COORDINATION	35
XIII.	APPENDICES.....	35
	.....Appendix A -References.....	37
	.....Appendix B -Definitions.....	39
	.....Appendix C - Species List.....	43
	.....Appendix D - NEPA and NHPA Compliance.....	45
	.....Appendix E - Five Year Fuels Treatment Plan.....	47
	.....Appendix F - Cooperative and Interagency Agreements.....	49
	.....Appendix G - M.I.S.T. Guidelines.....	51
	.....Appendix H - Sample Delegation of Authority for IMT's.....	53

LIST OF FIGURES

Figure 1.	Location of Gila Cliff Dwellings National Monument.....	4
Figure 2.	Fire Management Units and Gila Cliff Dwellings National Monument.....	12
Figure 3.	Fire Management Organization – NPS and USFS.....	29

LIST OF TABLES

Table 1.	Fuel Model Descriptions.....	14
Table 2.	Staff Responsibilities – Wildland Fire Use.....	22
Table 3.	Key Interagency Contacts.....	30

THIS PAGE INTENTIONALLY LEFT BLANK.

I. INTRODUCTION

A. Reasons for Developing this Plan

Gila Cliff Dwellings National Monument (“the monument” or “the park”) is located in southwestern New Mexico, approximately 44 miles northwest of Silver City (Figure 1). The monument was established on November 16, 1907 in recognition of its substantial cultural resources, particularly the group of cliff dwellings known as Gila Hot Spring Cliff-Houses. The monument is surrounded by Gila National Forest, including portions of the Gila Wilderness; the nation’s first designated wilderness area. In 1975, the National Park Service (NPS) and the U.S. Forest Service (USFS) signed a cooperative agreement, whereby the monument is administered by the USFS in accordance with NPS guidelines and regulations (Appendix F).

The purpose of developing a fire management plan (FMP) for Gila Cliff Dwellings National Monument is to provide strategies for the management of fire and fuels within and adjacent to the monument, as determined cooperatively by NPS and USFS, in order to protect the resources and values of the monument and the adjacent Gila National Forest (Gila Wilderness). This plan meets the requirements of NPS Director’s Order 18 (DO-18). DO-18 states that “each park with vegetation capable of burning will prepare a fire management plan to guide a fire management program that is responsive to the park’s natural and cultural resource objectives and to safety considerations for park visitors, employees, and developed facilities.”

http://www.nps.gov/fire/download/fir_wil_do18.pdf.

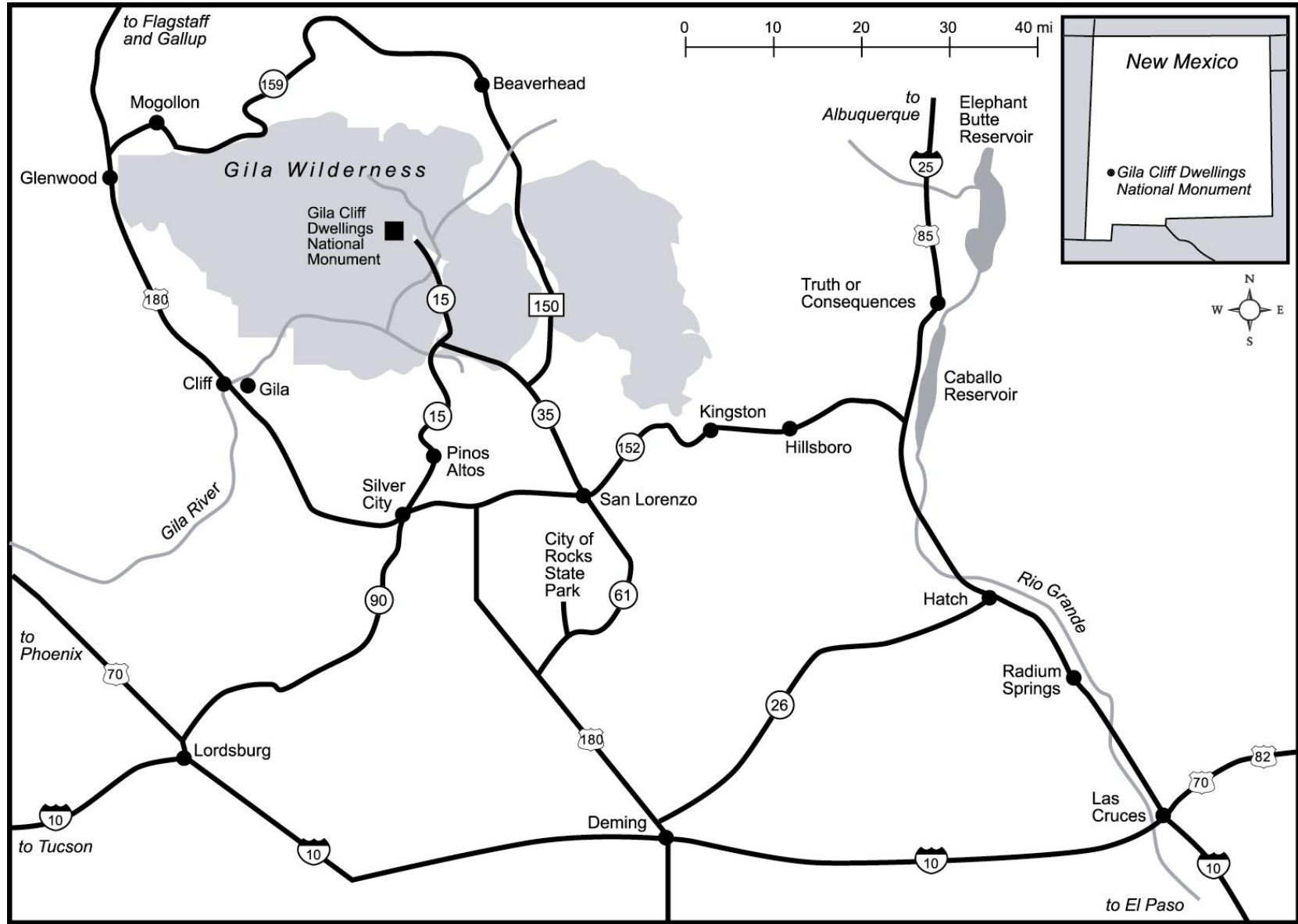
B. Collaborative Processes Used

As mentioned above, this FMP is being developed cooperatively by NPS and the USFS. As such, the plan will rely heavily on the existing plans in place for Gila National Forest and will continue to be implemented as a joint agency effort.

In preparing the FMP and the associated compliance documentation, several plans and policies were considered in developing the fire and fuels management strategies. These included the following:

- The Gila National Forest has the *Gila National Forest Fire Management Plan* which provides a framework for wildland fire use based on site-specific conditions.
- The *Gila National Forest Plan* includes a section on fire management that identifies standards for protection of life and property, fire support services, and fire suppression strategies.
- The Cooperative Agreement between the USFS and NPS for management of the monument, which has an attachment that covers the management of fire on the monument by the Forest Service.
- Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (August 1998).
- Federal Wildland Fire Management Policy and Program Review (1995).

Figure 1: Gila Cliff Dwellings National Monument Location



- Managing Impacts of Wildfires on Communities and the Environment, and Protecting People and Sustaining Resources in Fire Adapted Ecosystems – A Cohesive Strategy (USDO/USDA).
- A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan (2002).

C. Fire Management Policies

This plan will implement fire management policies and help achieve resource management and fire management goals as defined in: (1) Federal Wildland Fire Management Policy and Program Review; <http://www.fs.fed.us/land/wdfire.htm> (2) Managing Impacts of Wildfires on Communities and the Environment, and Protecting People and Sustaining Resources in Fire Adapted Ecosystems – A Cohesive Strategy (USDO/USDA); and (3) A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan.

D. Compliance

This plan meets National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) requirements. The attached Environmental Assessment (EA) serves as the NEPA documentation for this plan, and also addresses compliance with Section 106 of NHPA and Section 7 of the Endangered Species Act. The EA is located in Appendix D.

Fire management actions in the park will be implemented in accordance with the regulations and directions governing the protection of threatened or endangered species as outlined in the Endangered Species Act and the protection of historic and cultural properties as outlined in the Department of the Interior Departmental Manual, part 519 and Title 36 of the Code of Federal Regulations; National Historical Preservation Act, Section 106. Mitigation to avoid or reduce impacts to cultural and natural resources is provided in the EA and discussed in this plan. Clearance procedures will be followed for any fire management activity that could affect cultural resources or endangered species.

Prescribed burns and mechanical hazard fuels reduction projects may need additional compliance work completed prior to project implementation. Project-specific Section 106 compliance and consultation with the New Mexico SHPO will be completed in the project planning stage. Project-specific informal Endangered Species Act consultation with FWS will also be completed, and formal consultation will be initiated as appropriate.

E. Authorities

The authorities for implementing this plan are contained in the National Park Service Organic Act of 1916; section 910, 1.1 of the Departmental Manual; National Park Service Management Policies (1988); Director's Order 18 and Reference

Manual 18. The Organic Act states that the purpose of the National Park Service is to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

National Park Service Policies 2001, Director's Order 18 (November 1998) and Reference Manual 18 (February 1999) are the guiding documents for wildland fire management plan implementation. The park's fire management objectives conform to the referenced documents.

Reference Manual 18 adds that the FMP will reflect NPS policies and "the specific characteristics, legislative obligations, environmental, and social considerations" for each particular area. http://www.nps.gov/fire/fire/fir_wil_pla_reference18.html

II. RELATIONSHIP TO LAND MANAGEMENT PLANNING AND FIRE POLICY

A. National Park Service Management Policies Concerning Fire Management

It is the policy of the NPS to allow natural processes to occur while meeting management objectives. Fire once played an important role in the function of the local ecosystems of the monument. Far from being a negative and destructive force, naturally occurring fires have helped to shape the landscape over time. In many cases, the landscape today shows the legacy of past fires. Many plant and wildlife species have evolved under the influence of fire and, in some cases, depend on fire for their continued existence. To remove fire from an ecosystem deprives that system of a powerful and dynamic natural force. The ultimate goal of fire management in the NPS is to restore fire to park ecosystems where possible through Fire Use. Human-caused wildland fires will still be appropriately managed.

B. Enabling Legislation and Purpose of Site

Enabling legislation to establish Gila Cliff Dwellings National Monument was enacted on November 16, 1907. The monument was created for the purpose of protecting the cultural resources found in the park. As the legislation states, the park was created because "the group of cliff dwellings known as Gila Hot Spring Cliff-Houses..." was considered to be "of exceptional scientific and educational interest, being the best representative of the Cliff Dwellers' remains of that region..." In 1962, additional acreage was added to the monument, bringing the total area to 533 acres.

C. Objectives of the Gila Cliff Dwellings National Monument General Management Plan

The monument currently has no General Management Plan, but does have a "Statement for Management" (August 1989) that discusses various issues and management objectives that include concern for cultural and natural resource

protection and visitor safety, plus an objective of achieving a harmonious relationship with the USFS.

D. Objectives of Gila Cliff Dwellings National Monument Resources Management Plan

The monument's *Resource Management Plan* (1987) addresses various resource areas and states that a fire management plan is needed. Protection of archaeological sites during suppression activities and long-range resource management activities reflecting the role of fire were listed as major concerns.

E. Agreement in Objectives of Fire Management Plan and Statement for Management and Resources Management Plan

Implementation of this FMP will support the Statement for Management and RMP by providing for resource protection, visitor safety, and interagency cooperation.

III. FIRE MANAGEMENT STRATEGIES

A. General Management Considerations

This FMP was prepared to respond to the need for a fire management plan at Gila Cliff Dwellings National Monument and to evaluate strategies for the management of fire and fuels within and adjacent to the monument. The monument is administered jointly by the NPS and the USFS under a cooperative agreement (Appendix H). The USFS has an approved Fire Management Plan in place. The plan complies with NPS requirements, but also takes into account the USFS's existing plan and current interagency guidance, and promotes interagency coordination and activities in and near the monument.

This plan allows for fire use and various fuels reduction activities within the monument as appropriate, using the existing *Gila National Forest Approved Fire Management Plan* and the interagency *Wildland and Prescribed Fire Management Policy – Implementation Procedures Reference Guide* (1998) http://www.fs.fed.us/fire/fireuse/wildland_fire_use/ref_guide/index.html as a guide for wildland fire use decisions. Mechanical treatment will be allowed. The plan focuses on the areas that are highest priority for fuels reduction, and provides for monitoring of results, in accordance with the 10-year strategy.

B. Wildland Fire Management Goals

The goals for this FMP were established by an interagency team, within the context of approved NPS land management plans and USFS fire management plans and policies. As previously discussed, the *Gila National Forest Plan* and the Gila National Forest's approved *Fire Management Plan* were considered, as were NPS plans relating specifically to the monument.

Based upon the interagency team's review of the project, the following goals were identified for this plan:

- Provide for the protection of human health and safety, including firefighters, agency personnel, and the public, during all phases of the fire management program.
- Develop a plan that addresses the fire management needs of Gila Cliff Dwelling National Monument, but promotes interagency planning and activity between the NPS and USFS.
- Protect identified values at risk from undesirable effects of fire.
- Implement the fire management program using cost-effective and environmentally sensitive techniques.

This plan will achieve these goals by providing an interagency plan that is based on natural landscape conditions rather than political boundaries at the monument borders. The plan and associated EA identify resources at risk and provide measures to ensure these resources and values are protected. Provisions for human health and safety are addressed, as are environmentally sensitive techniques. The mitigation measures listed in the attached EA (Appendix D) provide details on many of these, as does the analysis of impacts to Human Health and Safety.

The goals support the federal wildland fire policy by making safety a priority and providing for a plan that involves interagency coordination. They also contribute to the 10-year comprehensive strategy by supporting the overall four goals of the strategy:

- (1) Improve Fire Prevention and Suppression – This plan specifies fire prevention measures and provide for a decision process that may lead to suppression under certain circumstances.
- (2) Reduce Hazardous Fuels – The plan addresses one of the biggest needs of the monument, to reduce hazardous fuels. The monument has not conducted any fuel reduction activities to date and fuel buildup in the canyons is at an unacceptable level.
- (3) Restore Fire-Adapted Ecosystems – The plan allows for fire use in and across the monument boundary, which will serve to restore fire-adapted ecosystems.
- (4) Promote community assistance – The plan goal is to protect the public health and safety. Managing fire in the above manner protects the public and communities by reducing the sudden threat of catastrophic fire and its inherent risk to visitors and employees. Gila Cliff Dwellings National Monument attracts numerous visitors which provide an important economic value to nearby communities. The EA involved the public and solicited public input.

C. Fire Management Options

Under this plan, fire management would be based on “natural landscape” conditions and not agency land boundaries. Fire and fire management prescriptions would be allowed to cross the Gila Cliff Dwellings National Monument/USFS boundary, and the NPS and USFS would coordinate actions. Various prescribed fire and fuels management activities would also be permitted in appropriate areas within the monument. This alternative was developed to allow for flexibility in selecting the types of fire-related activities used at Gila Cliff Dwellings National Monument.

The two main components of this plan include the following:

- (1) Wildland Fire Suppression or Wildland Fire Use – Naturally ignited fires would either be suppressed or allowed to burn under a plan for wildland fire use, based on the outcome of a Wildland Fire Implementation Plan Stage 1 analysis. Local fire and drought conditions, resources and funding, public safety, and smoke conditions would be considered in deciding whether or not to allow wildland fire use. The appropriate management official may consider allowing wildland fire use fires to move onto monument lands for resource benefits, if park values at risk are adequately protected from damage from the fire or fire management activities. All unplanned human-caused fires will be suppressed. Management of wildland fire use incidents would rest primarily with the Gila National Forest, due to their fire staffing levels, and expertise at managing fires on their adjacent lands.
- (2) Fuels Reduction – Prescribed Fire and Non-fire Applications – Fuels reduction methods would be used as appropriate throughout the monument, including use of prescribed fire and mechanical treatments. The intent of any fuel reduction effort is to reduce the intensity of wildland fires to levels that enable fires to burn without damaging important park resources and values, and to reduce the hazard to firefighting resources involved in fire management activities. The fuels management component of this plan would eventually follow the guidance of a proposed five-year fuels treatment plan (Appendix E).

Under this plan, mechanical treatment and prescribed fire would be used in the following areas and situations:

- (1) Manual Treatments (thinning utilizing chainsaws and handtools) – this prescription would be used in areas that have heavy fuels accumulation and cultural resources and/or other values that could be adversely affected by prescribed burns or wildland fire. Mechanical treatments would be prescribed in at least two areas of the park:
 - Cliff Dweller Canyon and Side Canyon (a valley approximately one mile long leading from the trailhead to the ruins); any

clearing would be preceded by Mexican spotted owl surveys and would follow Recovery Plan requirements.

- The immediate vicinity, and associated values at risk including TJ Ruins — the immediately adjacent concentration of brush and mountain mahogany has created a fuel load that requires specific, directed fuel reduction work to protect values at risk.
- (2) Prescribed fire – this prescription would be used only in areas of the park containing fewer values at risk and lower fuel loading, or in areas where satisfactory fuels treatments are completed. In all cases, a site-specific prescribed burn plan will be developed for any project under consideration. Efforts will be fully coordinated with the Gila National Forest.

D. Description of Fire Management Strategies by Fire Management Unit

1. Fire Management Unit Identifier

The Monument is identified as Fire Management Unit 3 under the Gila National Forest Fire Management Plan. Figure 2 shows the units in more detail.

a. Unit Characteristics

The park is characterized by 533-acres of Ponderosa pine, pinyon-juniper-oak, and mixed conifer woodland, with open grasslands. Small wetlands exist in low spots or old channels along the West Fork of the Gila River. Air quality and water quality are good, with few point sources of pollution in the area. A wide variety of wildlife and bird species can be found in the park. Habitat types range from the low riparian areas to montane pine and fir forests, plus interspersed open grasslands and lower elevation pinyon-juniper-oak woodlands. Appendix C contains references to species checklists available for the monument.

The park's primary feature is its cultural resources, embodied in the cliff dwellings and ruins that are the park's significant features. In addition, the park contains habitat for several threatened or endangered species, including Mexican spotted owl habitat in Cliff Dweller Canyon.

b. Strategic Objectives

The fire management strategies for wildland fire use are to manage fires in accordance with the Gila National Forest *Fire Management Plan* and the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (August 1998). For fuels management, the proposed five-year plan (Appendix E) outlines the strategies to be followed in the park. In general, the plan includes the following:

- Begin regular applications of mechanical treatments and prescribed ignitions to achieve resource and fire management objectives. This should entail treatment of twenty acres over the next five years.
- Monitor the outcome of fuels management activities. This information will be used to refine prescribed fire prescriptions, to make fire behavior projections, and to improve management strategies.
- Use prescribed fire to restore and maintain a natural vegetation community.

c. Management Considerations to Operational Implementation

The park contains many cultural and natural resources that require protection, and human health and safety are always considered in implementing any fire management plan. The following are some of the considerations for this park:

- Consult with the NPS cultural resource specialist and protect archeological sites from any ground disturbing suppression activities or fuel reduction activities.
- Avoid disturbance to threatened and endangered species during sensitive periods, such as nesting seasons, whenever possible.
- Ensure that any required surveys are conducted prior to activities planned in threatened and endangered protected habitat.
- Ensure that air quality regulations are considered in developing implementation plans.
- Ensure that sociopolitical and economic impacts are considered in developing implementation plans.
- Consult park neighbors concerning any activity that could impact them.

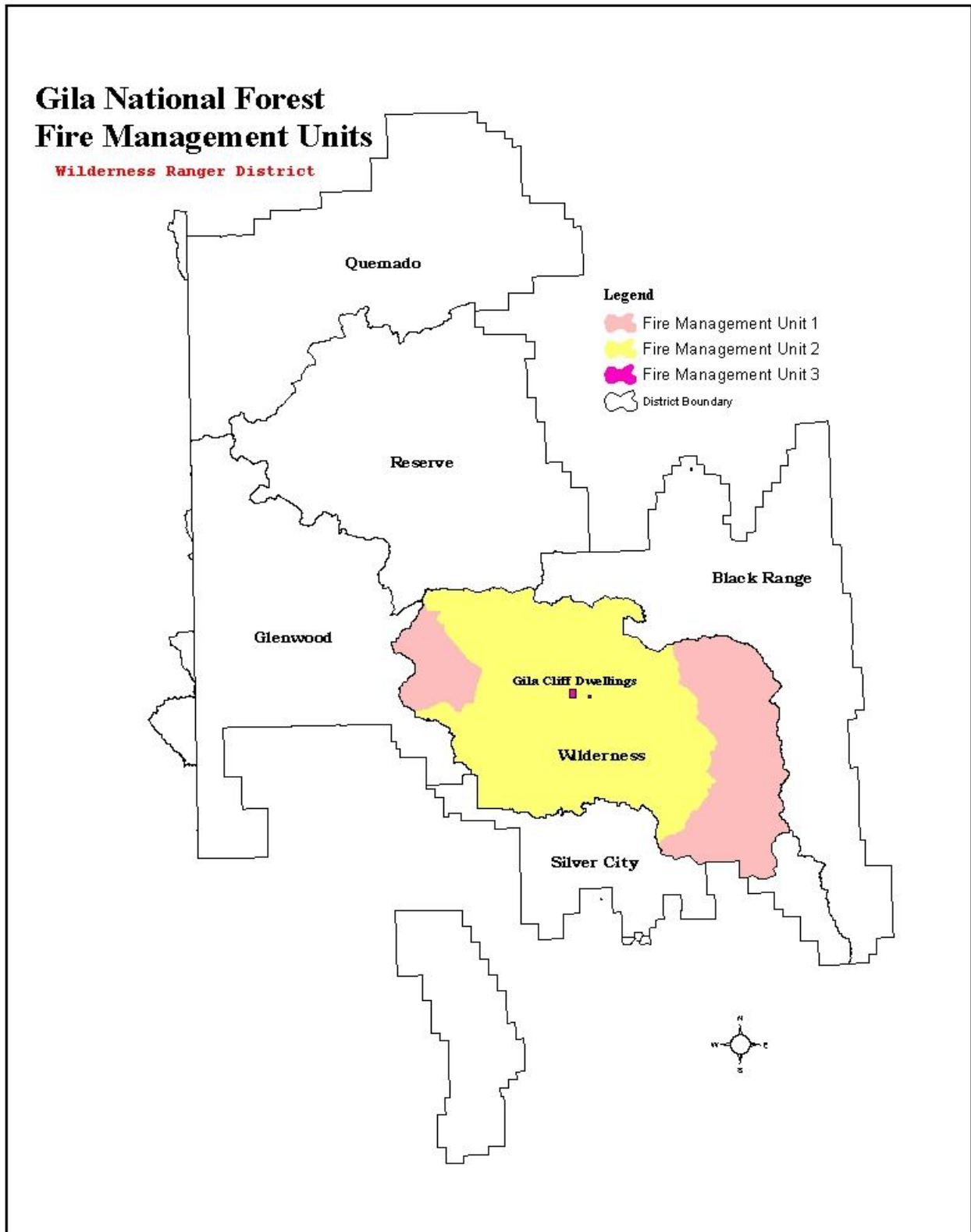
Additional detail about mitigation measures that would be included in implementing the FMP is included in the EA.

<http://www.nps.gov/gicl/pphtml/documents.html>

d. Historic Role of Fire

The history of fire in ponderosa pine forests in the Gila Wilderness, New Mexico (Swetnam, et al.) shows that extensive surface fires were a common occurrence before 1900. Mean fire intervals from 1633 to 1900 were approximately four to eight years, and fire intervals ranged from one to 26 years. After 1900, periodic recurrence of fires that scarred the sample trees ceased, with a striking decrease in the number of fires recorded after 1900. This evidence indicates that the fire regime that had persisted for centuries was essentially eliminated by the beginning of the 20th century, probably due to grazing activity eliminating the carrier fuels.

Figure 2: FMU 3 - Gila Cliff Dwellings National Monument



Fire suppression activities started on public lands in and around the Gila National Forest in the early 1900s. Due to the fire suppression activities in the monument, forest fuels have accumulated to higher levels in several locations than would have existed with more frequent fires. This accumulation has caused a shift in fire regimes, which has decreased fire frequency. Without frequently occurring fires, vegetation continues to accumulate, altering stands from their historic condition to longer interval, higher severity fire regimes.

e. Fire Management Situation

1) Historical Weather Analysis

The climate is characterized by hot summers, mild winters, and relatively high wind velocities in spring. Rainfall is monsoonal in nature and occurs generally in late summer and is typically associated with thunderstorms. Extremes in temperature range from 105 degrees F to -10 degrees F. Average annual precipitation is 15 inches.

2) Fire Season

The fire season at the park is April through September. Lightning-caused fires predominately occur between May and August. The incidence of human-caused fires in the vicinity of the park is considered minimal. For staffing purposes, the U.S. Forest Service is staffed on a year-round basis.

3) Fuel Characteristics

Topographically, the Gila Cliff Dwelling landscape area is very broken, with numerous intersecting drainages and multiple aspect changes. Additionally, few expanses of similar aspect and slope exist. These features, as well as the pinyon-juniper ecotones and other natural barriers tend to limit fire spread.

Table 1 provides information on the fuel models that exist in the monument and surrounding USFS lands and illustrates that fires occurring in the forested fuel models (5, 8, and 9) have relatively low flame lengths. Fires with flame lengths less than four feet are typically within the control capabilities of firefighters with hand tools. The initial size of the fire is assumed to be less than one acre.

Table 1: Fuel Model Descriptions (Typical Summer Day)

Fuel Model	Fuel Type	Flame Length (ft.)	Size After One Hour (acres)
FM 2	Grass with Sage and/or Open Timber	4.2	13
FM 5	Low Brush	3.8	5
FM 8	Timber with Light Litter	0.8	Less than .25 Acre
FM 9	Timber with Heavy Litter	1.9	1

The following parameters were used to represent conditions for a typical summer day: Temperature 80-85°F; relative humidity 20-25 percent; 20 ft. wind up-slope 5 mph; slope 30 percent; live fuel moistures 100 percent; and shading 50 percent.

Fuel models 2 and 5 would be more difficult to control; additional resources and possible aerial support (air tankers, water dropping helicopters) would be used on a case-by-case basis. These fires would be about 5 to 13 acres in size by the time the first fire crews arrived (if response time is less than one hour.)

The current risk of a large stand replacing wildland fire in the analysis area remains relatively low, as evidenced by the lack of fires greater than 100 acres in the past 40 years. However, with the eventual buildup of fuels in and adjacent to the monument, the risk of a large wildland fire increases.

4) Fire Regime Alteration

The decline of the periodic fires was a direct result of several human-induced changes. The relationship of changes in land use to changes in fire regime has been recognized and discussed in many fire histories and other ecological studies (Leopold 1924; Weaver 1951; Cooper 1960; Arno 1980).

The Gila Cliff Dwellings analysis area is a low fire occurrence area. During the past 10 years there have been two recorded fires; one was caused by lightning and one was human caused. Large fires have been recorded in the Gila National Forest; fuel reduced in these fires may help prevent large fires from easily moving into Gila Cliff Dwellings National Monument.

5) Control Problems

Resistance of fires to control can be high in the monument and on adjacent lands due to high winds and fuel conditions. Wildland fires in this area can be driven by high winds that result in high rates of spread and flame lengths, putting the entire monument at risk. In addition, the canyons and riparian areas have become very overgrown and are difficult to traverse; this can fuel intense wildfires and hinder control efforts.

6) Values to be Protected

The cultural resources for which the park was established are of primary concern for protection, as are its natural resources and adjacent USFS lands and visitor facilities. The adjacent lands include the Class I airshed of the Gila Wilderness and the USFS campground facilities located between the two monument units. Additionally, a complex of administration and concession facilities require protection. A more detailed description of resource and values to be protected can be found in the Affected Environment Chapter of the EA. A map of specific park cultural sites is kept at the visitor center and would be available with a resource advisor to guide emergency suppression actions in the monument.

IV. FIRE MANAGEMENT PROGRAM COMPONENTS

A. General Implementation Procedures

The park has an interagency agreement with the U.S. Forest Service to manage all wildland fires within monument boundaries. All wildland fires will be managed under the most appropriate management response based on the procedures contained in the Gila National Forest Fire Management Plan and the Prescribed Fire Management Policy Implementation Procedures Reference Guide (August 1998). Specific Wildland Fire Implementation Plan requirements are outlined in Chapter 4 of the Interagency Reference Guide and will be followed by the USFS and NPS. The Stage I analysis directed by the Guide will provide the decision criteria needed to make the initial decision whether to manage the fire for resource benefits or to take suppression action.

B. Wildland Fire Suppression

1. Range of Potential Fire Behavior

The range of potential fire behavior is based upon wind speed and amount of fuel buildup in the affected areas. Lighter winds will result in lower rates of spread and flame lengths; higher winds will result in higher rates of spread and flame lengths. Severe fires may occur during drought periods in late spring and early summer and where fuel accumulation is extreme. Temperature, humidity and other factors can also increase/decrease the range of fire behavior.

2. Preparedness Actions

a. Fire Prevention Activities

Fire prevention includes all activities designed to reduce human-caused wildfires within and adjacent to the park. Two major aspects of prevention are public awareness and education.

The fire prevention program will include the following activities:

- Pertinent signs, posters and notices will be posted on bulletin boards at the visitor center, campgrounds, and contact station;
- Fire prevention messages will be included in appropriate brochures describing the park's wildland fire management program;
- Fire prevention messages will also be included in media releases as appropriate;
- Pertinent messages will be included in visitor center exhibits and interpretive talks; and,
- Uniformed park personnel will share appropriate information with visitors and neighbors through informal contacts.

b. Annual Preparedness Activities

The elements of preparedness are training, equipment and cache maintenance, record keeping, pre-attack planning, risk analysis and emergency preparedness. These activities are handled by the USFS. The nearest USFS fire engine is located at Mimbres and is maintained by the USFS staff.

The park utilizes the NPS Park Cluster Fire Management Officer (FMO), who is stationed at Guadalupe Mountains National Park and is administratively responsible for the overall park fire management program at Gila Cliff Dwellings National Monument. The park relies on the USFS FMO and the NPS Superintendent to serve as the on-the-ground contact for the NPS Park Cluster FMO, who may only be available by telephone at certain times.

1. Weather Station

The park uses data collected by the U.S. Forest Service at their weather station at the administrative site (Gila Center RAWS- 292011)

2. National Fire Danger Rating System (NFDRS)

The NFDRS thresholds for the Gila National Forest have been developed by the USFS, and these thresholds will be used by USFS staff to address fires within the monument. Fire danger information is communicated to monument staff by radio.

c. Step-up Staffing Plan

Since the NPS presently has no red-carded staff at the monument and the USFS is tasked with preparedness and response, the step-up response plan for NPS consists of the following:

- NPS will post appropriate fire danger notices and oversee temporary park closures as needed.
- If the NPS has any red-carded employees on site, they will follow the guidance in the Gila National Forest Fire Management Plan regarding actions in step up staffing conditions.
- The Gila National Forest will insure monument employees get notification when staffing levels 4 or 5 occur in the Forest.
- The park staff will notify the Guadalupe Mountains National Park FMO when staffing levels are 4 or 5.

3. Initial Attack

Visitors, neighbors, and employees will report most fires. Any park employee to whom a fire is reported must obtain complete information regarding the fire; and the name, address, and phone number of the reporting party.

The USFS will assure that all fire reports are promptly investigated and will manage initial attacks according to their policies and the guidance in the Gila Fire Management Plan. Initial attack on wildfires is the primary responsibility of the on-scene USFS Incident Commander with support from the USFS staff. The NPS Park Cluster FMO and a Resource Advisor will be notified of a wildland fire as soon as possible, and the NPS Resource Advisor should be onsite to supply information to suppression or fire use management resources. Once a fire is located and a size-up conducted, the USFS Incident Commander will determine the most appropriate tactics to manage the fire.

a. Criteria for the Initial Attack Response Consistent with the Park's General and Resource Management Plan Objectives

The park has no General Management Plan, but its Statement for Management and Response Management Plan emphasize cultural resource protection and visitor safety. Criteria consistent with these documents include the following:

- Public and firefighter safety
- Protection of values at risk

b. Confinement as an Initial Attack Suppression Strategy

The federal fire policy allows managers to select the most appropriate management response, and confinement may be selected as the appropriate suppression strategy, based on the outcome of the Stage I Analysis.

When confinement is determined to be the appropriate tactic, resource objectives may not be the selection criteria used to choose that alternative. Resource objectives may be considered, but safety, cost effectiveness,

resource availability, chance of success etc., are the decision criteria used to select the appropriate management response.

c. Typical Fire Response Times

All response times are subject to availability of firefighting resources. Fire response time at the park will vary. During the period of highest activity in the fire season, when no other fires are burning and staff is available, the local engines (USFS) can respond to most fires within 1 hour or less. Air tanker and helicopter attack can typically reach a fire within a few hours. Reinforcements from outside the immediate vicinity may not arrive until about 8 hours, or more, after a request is made for them.

5. Extended Attack and Large Fire Suppression

a. Extended Attack Needs

Extended attack needs will be determined by the USFS handling the initial attack response.

b. Implementation Plan Requirements

A Wildland Fire Situation Analysis will be initiated for all wildland fires escaping initial attack. The agency FMOs will coordinate with the park superintendent and District Ranger to complete this analysis. An example of the Wildland Fire Situation Analysis can be found in Reference Manual 18, Appendix A.

c. Complexity Decision Process

See NPS Reference Manual 18, Chapter 9, Exhibit 2 for a complexity decision chart. This process will follow the procedures set up in the Interagency Reference Guide.

d. “Delegation of Authority” for Incident Commander

Whenever an Incident Commander from the USFS manages a fire within the park’s boundaries, a written limited delegation of authority will be provided. A sample delegation of authority is found in Appendix H.

6. “Minimum Impact Suppression Tactics”

Fire management activities in the park will be conducted in such a way as to cause the least amount of impact to the resources. The use of minimum impact suppression will be stressed to all suppression forces working within the park. Methods and equipment used will be commensurate with the prevailing and predicted fire behavior. The strategy selected will be that which least alters the

landscape or disturbs natural and cultural resources while safeguarding human lives. Minimum Impact Suppression Tactic guidelines can be found in Appendix G.

Examples of minimum impact suppression include:

- Use water instead of fire retardants, especially in or near riparian areas or around cultural sites.
- Cold trail the fire edge when practical
- Wetlines or natural fuel breaks will be used wherever possible in lieu of handline construction if water and pumps are available
- Utilize soaker hose, sprinklers or foggers in mop-up. Avoid boring and hydraulic action
- Firelines will be kept to the minimum width necessary to allow backfiring or safe blackline to be created. Use natural barriers and existing roads and trails whenever possible;
- Decisions on suppression actions will be made by the Incident Commander within the scope of the delegation of authority;
- Minimize cutting of trees;
- Archeological sites will be identified prior to a fire and protected wherever possible. Minimize ground disturbance to protect cultural resources. Coordinate with Cultural Resource Specialist regarding all fireline construction around archeological sites;
- Scatter or remove debris from suppression actions as prescribed by the Incident Commander.
- All firelines, spike camps, and other disturbed areas will be rehabilitated to return the site to the way it appeared before the incident.

7. Rehabilitation

The methods of suppression used on wildfires at the park shall be those that produce the least significant resource damage consistent with suppression goals. This will reduce the need for rehabilitation. In some cases, however, fire impacts or associated suppression actions are unavoidable and will require rehabilitation. In no case will rehabilitation be undertaken which will worsen the situation. In all cases, rehabilitation will be coordinated with the NPS Cultural Resource Specialist (and the SHPO as needed).

Rehabilitative actions may include obliterating fire lines, flush cutting stumps, removing cut logs, erosion control, and scattering brush piles and debris. Generally, burned areas will not be reseeded unless necessary for immediate soil stabilization and approved by the Intermountain Regional Office. Residual seed and sprouting from surviving rootstocks will provide natural rehabilitation. Chemical treatments of exotics may be used (according to the park's approved Integrated Pest Management Plan.) Boundary fences will be replaced as appropriate.

All litter and trash in the vicinity will be removed after a fire is declared out. Firelines will be refilled and erosion control devices will be installed, if necessary. The severity of the burn and its resulting impacts will be considered when determining the need to re-establish native plants. Landscaping and planting will be in full compliance with NPS management policies, and will have the prior approval of the regional director. A rehabilitation plan will be prepared before any action is undertaken. The plan will include species to be planted, techniques to be used, locations, and cost estimates.

Rehabilitation will begin as soon as possible, even before the fire is out. This is especially important if existing equipment and personnel on the fireline are not being fully utilized in mop-up operations. Funding of the direct costs of fire suppression impacts rehabilitation will be handled by the Incident Commander in coordination with the park resource advisor and Park Cluster FMO, and charged to the fire suppression account. Requests for planting, seeding, erosion control of the burned area, or long term rehabilitation or restoration of the burned area will go to the Intermountain Regional Office Burned Area Rehabilitation Coordinator. Requests will include description of the activity, costs, starting and ending dates and must be followed up in writing.

8. Records and Reports

The NPS Park Cluster FMO is responsible for completion of the Individual Fire Report which will be completed in cooperation with the Gila Cliff Dwellings National Monument staff. The USFS Incident Commander should keep all information related to the fire and turn over that information to the Superintendent, who will provide it to the Park Cluster FMO. The Monument will report on all fire activity or projects through the “Fire Program Portal” of Inside NPS. The portal is located at <http://data2.itc.nps.gov/fire/admin/LoginForm.cfm>. Information should be added daily or as activity dictates until the event is over.

Individual Fire Report

Reports and records will be held permanently in the fire management office, with copies kept at Gila Cliff Dwellings NM. An Individual Fire Record (Department of Interior Form DI 1202) will be completed for all wildland fires by the Park Cluster FMO. Copies of reports will be forwarded promptly to appropriate cooperating agencies and the Intermountain Regional Office.

The report provides a historical record of the fire regime for the park. All fires within the boundaries must be documented with this form, including fires that go out on their own. The form is also used by the Department of Interior to record fire occurrences. Support actions in which park personnel respond to fires outside the park (including out of state) are also to be reported on this form. The NPS must have a DI 1202 with an incident number on file for firefighters to receive credit for work performed on any fire.

For large fires, a complete fire report will include, as applicable:

- Written policies, guidelines or authority statements signed by the park superintendent
- Copies of equipment purchased or personnel request orders;
- All situation maps;
- Personnel lists, including emergency firefighter time slips;
- Press clippings;
- Accident reports;
- All weather data reports and records;
- Documentation of financial charges made against the incident; and,
- Rehabilitation plan.

C. Wildland Fire Use

1. Objectives of Wildland Fire Use

As stated in the EA, fire suppression is thought to be one of the key factors in the decline in forest health across the western United States. Providing for the option of wildlife fire use in an approved FMP meets the needs of the monument to allow for other responses in addition to full suppression. Also, inclusion of wildland fire use allows for collaborative decision making with the USFS and allows for wildland fire use to occur both in the monument, as well as the surrounding National Forest. This plan will allow for a greater integration and use of federal fire management principles.

2. Criteria for Decisionmaking

Management decisions for wildland fire use within and across monument boundaries will be a joint decision by the USFS Fire Staff Officer (or designee) at the Gila National Forest office in Silver City, NM and the NPS Park Cluster FMO, participating either in person or via telephone. Also, the District Ranger, Wilderness Ranger District and/or Superintendent will be consulted prior to implementing any wildland fire use in or near the monument. The decision to continue with wildland fire use will be based on the existing Gila Fire Management Plan and the procedures and guidance contained in the Prescribed Fire Management Policy Implementation Procedures Reference Guide (August 1998.) The types of special considerations and assessment of risk related to wildland fire use will include those factors listed in the Gila Fire Management Plan decision flowcharts and the decision criteria listed in the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide (August 1998) and will include time of season, fire danger, smoke conditions, weather conditions, presence of sensitive resources (especially cultural resources in the monument) and the availability of adequate fire resources and funding. Weather conditions will be monitored by the assigned Fire Use Manager.

3. Wildland Fire Use Implementation Procedures

a. Periodic assessment

All wildland fire use implementation procedures will follow the procedures used by the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide. The Fire Use Manager will establish the assessment schedule as stated in the WFIP.

b. Wildland Fire Implementation Plan, Wildland Fire Situation Analysis

Outlines and requirements for the WFIPs and wildland fire situation analyses to be completed by the fire management personnel and will follow established procedures.

4. Potential Impacts of Plan Implementation

Plan implementation will have many effects on park resources, as well as economic impacts. The use of wildland fire will benefit many resources in the long-term and will have short-term, mostly minor adverse impacts to vegetation, soils, wildlife, and cultural resources. The EA provides detailed analysis of the potential impacts of this plan. Mitigation measures outlined in the EA will serve to minimize impacts to the park’s cultural resources and threatened or endangered species. The NPS Cluster FMO will annually make the required notification of the New Mexico Environment Dept., Air Quality Office, about potential wildland fire use in Gila Cliff Dwellings National Monument as required by state regulations.

5. Staff Responsibilities

Wildland fire use positions responsible for initiating and implementing steps in the wildland fire use decision process are listed on Table 3. This includes USFS positions, as well as NPS positions. All required positions must be available in order to the NPS to proceed with wildland fire use in or across monument boundaries.

Table 2

Staff Responsibilities - Wildland Fire Use

Position	Responsibility
FUMA (Fire Use Manager)	
NPS Park Cluster FMO	Involved in decisions on daily basis by phone
District Ranger, Wilderness Ranger District, and Superintendent	Part of daily planning team

Step up staffing will follow the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide.

6. Public Information Provisions

Public information will be provided by the USFS/NPS Interpretive staff and Public Information Officer, with the cooperation and assistance of the Park Superintendent. The FUMA will direct the PIO to take appropriate public information steps according to the incident (severity, location, stage). Public information efforts will be stepped up according to need. Actions that may be taken include:

- Appropriate signage
- Distribution of flyers or notices
- Press releases
- Use of interpretative personnel at various locations in park
- Interpretative programs

Key contacts at the federal, state, local, and tribal levels, including congressional delegates, will be notified. A list of these is maintained by the USFS/NPS and is also available from the Superintendent at the monument. Included in this list are the federal and state and local agencies and tribes listed in the Consultation and Coordination section of the EA.

8. Permanent Project Record

A permanent project record will be done for each wildland fire use application completed at Gila Cliff Dwellings National Monument. The record will be completed by the FUMA and provided to the Superintendent. All permanent project records will contain the following information:

- a. Approved planning document that guided management actions (e.g., Wildland Fire Implementation Plan, Wildland Fire Situation Analysis). Include all amendments and revisions.
- b. Monitoring reports and summaries of findings, along with a summary of all monitoring activities including a monitoring schedule (level 1 and 2 monitoring).
- c. Revalidation and certification documents.
- d. Funding codes and cost accounting.
- e. Project maps. All fires greater than 100 acres will be permanently mapped and archived, using GIS.
- f. Other information as appropriate for the situation such as photo points.
- g. Explanation of the funding/fiscal tracking of costs associated with wildland fire.
- h. Copy of delegation of authority used.

D. Prescribed Fire

1. Planning and Documentation

a. Annual Planning Activities

A list of burns to be completed in the next five years can be found in Appendix H. Planned ignitions will be conducted in burn units and within specified weather and fuel moisture parameters. Prescriptions may be adjusted as deemed necessary by monitoring results, information gained from research burns, and further refinement of the prescribed fire program.

Burn plans should be prepared well in advance of the ignition. Prior to any ignition the Superintendent must approve all prescribed burn plans. A burn plan may have multiple burn units if these units have similar vegetation types, burn prescriptions, and resource management objectives.

Prescribed fire burn units may vary in size. Prescribed fire boundaries should use the natural features (slope, aspect, and vegetation), natural fuel breaks, and roads and trails for perimeter control. Proposed construction of perimeter fire control lines should be evaluated for impacts to natural and cultural resources, cost, and defensibility. Boundary and fence lines are often costly to construct, and they increase risk to firefighter safety during holding operations.

At the start of each year, the Park Cluster FMO, USFS Wilderness District FMO, and NPS cultural resource management specialist will meet to identify all upcoming projects to be completed during the upcoming year. Objectives, acreages, fire team members and target dates will be stated for each fire management unit. Approval of the annual burn program does not constitute final approval of individual burn plans.

All planned ignition projects will have an approved burn plan containing measurable objectives, predetermined prescription, environmental compliance documents, operational procedures to properly prepare for and safely conduct a planned ignition, and contingency actions in event that prescription is exceeded.

Each planned ignition will be monitored in order to maintain current information on fire size, location, rate of spread, intensity and potential threats, which might require suppression actions in the event of an escape. Fire effects monitoring will also be implemented to the standards of the 2003 NPS Fire Monitoring Handbook.

http://www.nps.gov/fire/download/fir_eco_FEMHandbook2003.pdf#search='Fire%20Monitoring%20handbook'

b. Long-term Prescribed Fire Strategy

For many years fire has been eliminated from its natural role in the park ecosystem. Planned ignitions will be used to restore native species, maintain

the fire-dependent natural community, and achieve management objectives. A five-year fuels management plan has been developed (Appendix E). The monument is considered to be one FMU and its fire regime and condition class are described in Section III D. of this plan and in the EA.

Each prescribed burn unit will be monitored to identify ecosystem response to fire after burns. Emphasis will be placed on refining prescriptions to meet the intended objectives for each fuel model.

c. Necessary Personnel

Planning and execution of this prescribed fire management program will be carried out by qualified fire management personnel and according to agency policy. All burns will be registered with the state of New Mexico Environmental Department for smoke permits.

d. Prescribed Fire Weather Monitoring

Fire weather will be recorded for at least one day prior to the planned ignition. Collection of fuel moisture will be done as needed and based upon the season of the burn. Fire weather observations will be collected during ignition and burning phases on an hourly basis.

e. Prescribed Fire Critique Format

The Park Cluster FMO and Prescribed Fire Burn Boss will conduct an after action review according to IRPG. This will be done as soon as possible after the burn has been completed.

f. Documentation Requirements

All burn information will be supplied to the Park Cluster FMO by the Burn Boss; and the Park Cluster FMO will be responsible for completion of the final planned ignition record after the burn is declared out. The record will include:

- Individual Fire Report (Department of Interior Form DI 1202);
- Burn Plan;
- Monitor Report;
- Cost Accounting;
- Tim Sheets;
- Monitoring Data;
- Fire Map;
- Fire Critique/Recommendations for future burns;
- Unit logs filled out by burn personnel; and,
- Any other pertinent information about the burn.

Individual burn plans will be kept on file at Gila Cliff Dwellings National Monument Visitor Center and shall be provided to the Superintendent.

The Park Cluster FMO will enter the burn accomplishment report into the National Fire Plan Operating Report System (NFPORS) and do the required individual fire report, (DI-1202)

g. Map of Historic Fuel Treatments

No map of historic fuel treatments presently exists. This map will be developed as the fuels management program at the monument is implemented.

h. Prescribed Fire Burn Plan Requirements

A burn plan will be prepared in accordance with Reference Manual 18, Chapter 10, and the Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide. This plan will become part of the project records (see f, above).

2. Exceeding Existing Prescribed Fire Plan

If the fire exceeds the burn unit boundary it must be declared “escaped” if not caught after 24 hours. A Wildland Fire Situation Analysis must be completed, and management must respond using the most appropriate suppression action. The fire management personnel staff will complete these actions in accordance with RM 18, Chapter 9 and the Interagency Reference Guide.

3. Air Quality and Smoke Management

a. Pertinent Air Quality Issues

Air quality is a major issue because the park is surrounded by the Gila Wilderness, a Class I area. Resources in Class I areas, which have relatively pristine air quality, receive special protection against air pollution. The protected resources are referred to as Air Quality Related Values (AQRV) and include the health of people and plants and visibility. The monument’s air quality and AQRVs are protected by CAA provisions that allow only limited increases over baseline concentrations of ambient air pollutants such as sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter (PM).

The area is considered in attainment for all National Ambient Air Quality Standard (NAAQS) pollutants, i.e., ambient concentrations of SO₂, CO, NO_x, PM, ozone, and lead are below CAA standards for these pollutants (Ball, 2002, pers. comm.).

The Environmental Protection Agency has set National Ambient Air Quality Standards for certain pollutants produced by wildland fire. These include:

Particulate Matter: Particles under ten microns in diameter can enter the airways and cause lung damage. Firefighters should take precautions to avoid inhalation of minute particles.

Oxides of Sulfur and Nitrogen: Large amounts of nitrogen and small amounts of sulfur are contained in forest fuels and combine to form oxides during burning. Fortunately, the amounts produced in wildland burning are not considered significant.

Carbon Monoxide (CO): CO is present in high concentrations in the immediate vicinity of a fire; however, it disperses very quickly and would be of minimal risk to the public, even a short distance from the fire. Firefighters can be affected and should take proper safety measures to avoid CO inhalation.

Ozone: Under certain conditions ozone can be formed during fire. This occurs in the upper part of the smoke column and therefore is not a threat to people near the fire. It can cause a problem downwind if the area affected already has high ozone levels.

There are also potentially harmful non-criteria pollutants, for which standards have not been set, that are contained in wood smoke. These include:

Aldehydes: Two chemicals in this group are acrolein and formaldehyde. Acrolein has a severe toxic effect on cells and can reduce the body's ability to ward off respiratory infection. Formaldehyde can irritate the eyes and throat and interfere with breathing.

Polynuclear Aromatic Hydrocarbons: Some polynuclear aromatic hydrocarbons are carcinogenic and can be inhaled as minute particles. They are of little threat to the public but could have long-term impact on firefighters.

b. Smoke Management Planning and Implementation Measures

The fire management program for the park will be in full compliance with interstate, state, and local air pollution control regulations as required by the Clean Air Act, Title 42, United States Code 7418. All prescribed burns will be registered with the New Mexico Environment Department, Air Quality Division (per 20 NMAC 2.60, 113). In addition, measures will be taken to protect smoke-sensitive areas in and around the park. These include the ruins (potential damage from soot), the visitor center, and the USFS campgrounds. Monitoring of smoke from prescribed fires will occur according to NMED requirements.

E. Non-Fire Fuel Treatment Applications

1. Mechanical Treatment

In sensitive areas and highly overgrown areas, the use of prescribed fire treatment may not be practical or the best initial fuels management choice. In these cases,

mechanical thinning using chainsaws and/or hand tools will be used to decrease fuel loads.

a. Annual Program Activities

The Five-year Fuels Treatment Plan (Appendix E) details the annual program for manual thinning in the monument.

b. Equipment and Seasonal Use Restrictions

These restrictions are spelled out in the five-year plan. Seasonal restrictions would be used to protect nesting and breeding wildlife.

c. Required Effects Monitoring

A project-by-project determination will be made as to the level of monitoring necessary. Monitoring will range from pre and post-project photographic documentation to implementation of standards in the NPS Fire Monitoring Handbook (2003).

d. Critique of Mechanical Treatment Projects

Upon completion of treatment, NPS staff will inspect the site to determine if specifications were sufficient to achieve resource management goals. Upon completion of the initial treatment, a maintenance schedule will be developed based upon inspection finding and long-term program objectives.

e. Cost Accounting

All costs charged to project will be tracked by the Project Manager and provided to the Superintendent after completion of the project.

f. Reporting and Documentation

Project progress, accomplishments, completion reports, and compliance or consultation documentation will be entered into the National Park Service Shared Access Computer System as required (NFPORS.)

g. Annual Planned Project List:

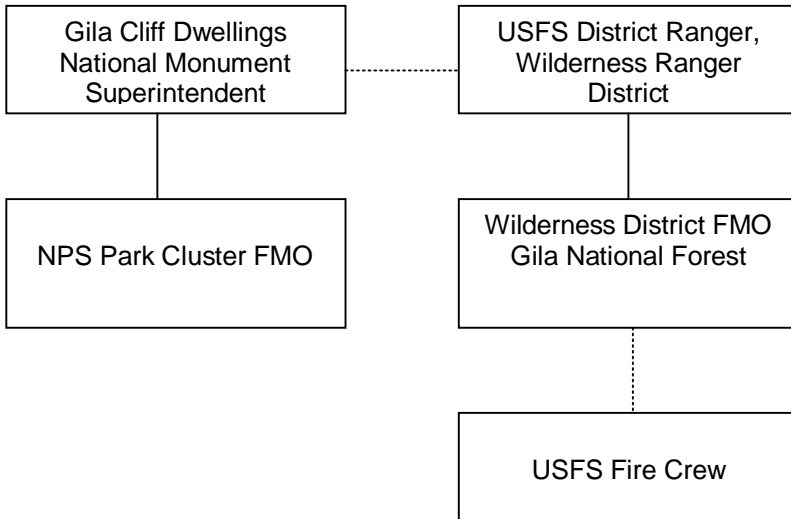
See Appendix E for the five-year plan for mechanical treatment projects.

V. ORGANIZATIONAL AND BUDGETARY PARAMETERS

A. Organizational Structure of Site’s Fire Management Program

The park does not have fire management staff and relies on its Cooperative Agreement with the USFS to cover all fire planning and implementation activities. The organization structure is depicted on Figure 3 and described in Table 2.

Figure 3: Fire Management Organization – NPS and USFS



B. FIREPRO Funding

FIREPRO is the mechanism for funding requests and resource allocations for the park’s fire management program. Currently, there is no FIREPRO funding for the monument. There is the potential for future FIREPRO funds for fuels management programs.

C. Fire Management Organization in Relation to Park Organization

See organizational format provided in A, above. This unit has only one NPS position in its permanent organization structure (Superintendent).

D. Fire Plan Assessment and Approval by District Ranger, Wilderness Ranger District

The District Ranger, Wilderness Ranger District or Assistant Superintendent is responsible for the approval of all planning documents pertaining to fire management actions; and will specifically certify, in writing, each day of a prescribed burn that resources and funding are available to manage the fire. The Incident Commander or Prescribed Fire Burn Boss will apply the decision criteria each day during a planned ignition or managed unplanned ignition to ensure that the criteria are being met.

The NPS Park Cluster FMO and Wilderness District FMO are responsible for reviewing the FMP annually and writing/recommending any changes to the Wilderness District Ranger

and Monument Superintendent. Changes must be within the context of the approved EA. Major changes of direction in the plan may require a new NEPA process. The District Ranger and Superintendent must review the plan and sign, certifying that it is still valid. Copies of any changes and the signatures will be sent to the NPS Regional Fire Management Officer.

E. Interagency Coordination

As previously described, interagency coordination and cooperation with the U.S. Forest Service and Bureau of Land Management is integral to successful implementation of the fire management program at the park. All wildland and prescribed fires will be conducted with external support by the USFS under the Cooperative Agreement and Interagency Agreement for Fire Management (Appendix F).

F. Key Interagency Contacts

Table 3 provides the key interagency contacts from both the NPS and USFS, along with their functions and contact information.

Table 3: Key Interagency Contacts

Title	Function	Office Location
Deputy Regional Fire Management Officer	Fire Management	Intermountain Support Office – Santa Fe
Regional Fuels Specialist – Fire Management	Fire Management	Intermountain Support Office – Santa Fe
Fire Ecologist	Fire Management	Intermountain Regional Office - Denver
Archaeologist	Cultural Resources	Intermountain Support Office – Santa Fe
Superintendent	Park and visitor Information	Gila Cliff Dwellings National Monument
Park Cluster Fire Management Officer	Fire and Fuels Management	Guadalupe Mountains National Park, TX
District Ranger, Wilderness Ranger District	Overall Review and Input- all sections	Wilderness Ranger District, Gila National Forest
Fire Management Officer	Fire Management	Wilderness Ranger District, Gila National Forest
Wildlife Biologist	Biologist	Wilderness Ranger District, Gila National Forest
Wilderness, Trail, Recreation Staff	Visitor Experience	Wilderness Ranger District, Gila National Forest
Archaeologist	Cultural Resources	Gila National Forest, Silver City, NM
Fire Staff Officer	Fire Management	Gila National Forest, Silver City, NM
Assistant Fire Management Office	Fire Management	Wilderness Ranger District, Gila National Forest

G. Fire–Related Agreements

The park has two fire-related agreements. The Cooperative Agreement for Management of Gila Cliff Dwelling National Monument (NPS/USFS) and the overall Interagency Agreement for Fire Management are provided in Appendix F.

VI. MONITORING AND EVALUATION

A. Monitoring Requirements

Monitoring will be done on an as needed basis to measure attainment of fire use objectives. Qualitative and quantitative changes in resources will be measured and results will be used to guide modifications for subsequent prescription treatments.

Long-term fire monitoring will measure the influence of fire on ecosystem structure and dynamics, identify areas for future research, and validate the use of fire in perpetuating the park ecosystems. The variables to be monitored will be those which have been determined to be primary indicators of long-term change. The park will determine primary indicators by examining fire management goals and objectives and by consulting fire effects specialists. Short-term monitoring will also determine if thinning and prescribed burns have achieved the objective of fuel reduction.

B. Fire Monitoring

The NPS Fire Monitoring Handbook (2003) is one resource that can be used as a guide for the park's monitoring program. USFS monitoring guidelines will also be used. Monitoring plans must be reviewed and approved by the Intermountain Regional FMO before funding is approved.

VII. FIRE RESEARCH

A. Completed Research

There has not been any fire research conducted at the park to date. In addition, a large body of scientific information on the effects of fire and fire exclusion in areas similar to the park already exists. The Gila National Forest has a large collection of research on lands and vegetation types adjacent to the park.

B. Needed Research

Research is needed to determine presence of certain listed species within the park. Surveys should be conducted to determine if the Mexican spotted owl is present in Cliff Dweller Canyon, and a rare plant survey has not yet been done on park lands.

VIII. PUBLIC SAFETY

A. Public Safety Issues

Wildland and prescribed fires can be hazardous for firefighters, employees, the visiting public, and nearby communities. The safety of all people and developments in the area are the foremost concern of the Incident Commander and/or prescribed fire burn boss and the NPS staff. Escape routes and safety zones will be identified. In extreme situations the Superintendent may close the park and order its evacuation.

B. Procedures for Mitigating Safety Concerns

The public will be kept out of the fire area and should be far enough away that they will not hinder suppression activities. No one will be permitted near a fire without adequate training and required personal protective equipment.

In the case of a wildland fire that has potential for rapid spread, park visitors could be in dangerous areas. Visitors will be informed about the fire at park access points, roads and the visitor center; and will be advised about areas where caution should be exercised. Park visitors and neighbors will be told of any fire activity that may become threatening and will be taught safety measures.

Temporary closure of part of the park may be necessary when fire could endanger visitor employee safety. When a fire threatens to escape from the park, adjacent authorities and agencies will be given as much advance notice as possible in order to take action.

During extreme situations in which the rate of spread constitutes an immediate threat, all efforts should be made to inform and evacuate all threatened parties as quickly as possible.

Signs will be placed at each trailhead, contact station, and other points of public access warning hikers when a prescribed fire or Wildland Fire Use incident is in progress. Warning signs will be placed on the roads if smoke creates a safety hazard. Roads will be temporarily closed if visibility is significantly impaired.

IX. PUBLIC INFORMATION AND EDUCATION

A. Public Fire Information Capabilities and Needs

An informed public can provide support for the fire management program at the park and aid in fostering its goals. A concerted effort will be made to raise public awareness of fire concerns, including fire prevention messages. Fire danger indices will be publicized when they are high or extreme, and ongoing fires will be carefully explained. Fire management messages will be introduced into interpretive programs as appropriate. The monument staff or USFS staff may participate in fire prevention and education activities in neighboring communities. Visitors will be made aware of fire restrictions and closures in and around the park. High fire danger notices will be posted at the visitor center. Local media will be

informed of fire prevention and education concerns through news releases. Media access to fire scenes will be facilitated when it is safe to do so. When interest is warranted, a staff member will be designated as the contact person for all information requests.

X. PROTECTION OF SENSITIVE RESOURCES

A. Cultural Resources

The potential impact of fire and fire management activities on cultural resources is very important at the park. All recorded sites will be protected from suppression action during fire operations; and unrecorded sites that are discovered during fire activity will be protected and recorded. Any time the soil is disturbed at the park there is the possibility that an unknown site will be impacted. All planned projects will be subjected to the Section 106 process, in consultation with the New Mexico SHPO. The monument will consult with the New Mexico SHPO on wildland fire suppression activities and wildland fire use actions as soon as possible after the start of a wildland fire.

Three major factors determine the extent of fire damage to archeological sites: fire intensity, duration of heat and heat penetration into the soil (Traylor et al., 1979). However, the most important variable influencing fire intensity is fuel load. Fire suppression has resulted in higher fuel loads at some areas. The potential for unplanned fire of high intensity poses a threat to cultural resources. The use of thinning and low intensity prescribed fires in the park to initially reduce fuel loads is proposed for the monument.

Significantly, the greatest damage inflicted on cultural sites is not the result of fire itself but of fire suppression activities. Fire retardants may have a corrosive effect on cultural materials. Mechanized equipment activity, hand line construction, helispot clearing, mopup activity and even rehabilitation can cut deep into the soil, damaging and displacing artifacts.

The impact of fire suppression and rehabilitation activities can be significantly reduced with proper foresight and planning. Minimum impact suppression and rehabilitation guidelines can be found in Reference Manual 18, Chapter 9, Exhibit 5 and mitigation measures to protect cultural resources are listed in the EA, which includes a detailed description of the cultural resources of the park and the potential impacts of implementing the FMP (which is Alternative B in the EA).

B. Natural Resources

The monument supports a wide variety of aquatic and terrestrial wildlife, and some federal or state listed threatened or endangered species are known to occur in the park or have protected habitat in the park. Fire management activities proposed under the plan have been reviewed by the USFS, and any formal or informal consultation will be initiated if the fuels management activities planned in the future will disturb known populations of listed species. In general, implementation of the FMP would generally result in minor short-term

adverse impacts to wildlife. When the natural role of wildland fire is again restored to these fire-adapted ecosystems, the habitat variety and diversity of plant communities would increase. Wildlife would benefit from increased nutritional quality and availability of forage. This would result in long-term beneficial impacts to most species.

Implementation of the FMP would result in no to negligible adverse impacts to many listed species, with short-term minor direct and indirect adverse impacts to some listed species due to unavoidable effects of fire use, prescribed fire, and thinning. The FMP could improve Cliff Dweller Canyon conditions so as to avoid severe impacts on the Mexican spotted owl from catastrophic wildfire— a beneficial impact.

However, the duration, extent, and intensity of adverse impacts would be lessened with implementation of the FMP, because of the decrease in potential for higher intensity wildfires and the avoidance of streamside vegetation or known nesting sites during fuels reduction planned for the area. The FMP would have beneficial impacts for most species due to the reduced possibility of erosion and resulting sedimentation impacts, the reduced need for unplanned fire line construction, and especially because of the care taken during pre-planned fuels reduction activities to avoid sensitive species while minimizing the fuel buildup levels in riparian areas and Cliff Dweller Canyon.

The EA lists mitigation measures that would reduce impacts to the park's natural resources and provide a detailed description of the sensitive resources, including wildlife, and threatened or endangered species, that are present in the park, plus the impacts expected under the FMP.

C. Infrastructure and Developments

Accepted interagency mitigation techniques will be applied to prevent or reduce negative impacts to the visitor center, USFS campgrounds, and trails. These techniques may include, but are not limited to, hazard fuels removal, improvement of fire engine accessibility, and removal or replacement of burnable materials on or near structures.

XI. FIRE CRITIQUES AND ANNUAL PLAN REVIEW

A. Critiques

All fires in the park will receive, at minimum, a review by those involved to evaluate such topics as: the initial response, control methods used, safety concerns, and the need for new and replacement equipment. All personnel will receive a briefing prior to entering the fire area. The Incident Commander, Prescribed Fire Burn Boss, Fire Use Manager, Park Cluster FMO, or the official who has designated fire program responsibilities, will conduct this after action review. The purpose of this review is to recognize and document actions that were successful, and to identify and rectify actions that were unsafe or ineffective.

The District Ranger, Wilderness Ranger District will conduct closeout meetings with incident management teams to ensure a successful transition of incident command back to

the park staff, and to identify and evaluate incomplete fire business. Refer to Reference Manual 18, Chapter 13, Exhibit 1 for a sample incident management team closeout.

A regional or national level fire review may be conducted if the fire:

- Crossed the park boundary into another jurisdiction without the approval of landowner or agency;
- Resulted in adverse media attention;
- Involved serious injury or death, significant property damage, or had the potential to do so; and,
- Resulted in controversy involving another agency or landowner.

Refer to Reference Manual 18, Chapter 13, Exhibits 2 & 3 for critique format and questions.

All entrapments and fire shelter deployments will be reported and investigated as soon as possible after the incident. Refer to Reference Manual 18, Chapter 13, Exhibit 4 & 5 for review directions and a written outline format.

B. Plan Reviews

The NPS Park Cluster FMO and Wilderness District FMO are responsible for reviewing the FMP annually and writing/recommending any changes to the Wilderness District Ranger and Monument Superintendent. Changes must be within the context of the approved EA. Major changes of direction in the plan may require a new NEPA process. The District Ranger and Superintendent must review the plan and sign, certifying that it is still valid. Copies of any changes and the signatures will be sent to the NPS Regional Fire Management Officer.

XII. CONSULTATION AND COORDINATION

The primary agencies involved in the development of the plan were the NPS and USFS. Major contributors are listed in the EA, page 73. Other agencies consulted through release of the EA and the proposed plan (in Alternative B) are found in the EA List of Recipients (p.75). These include tribes, state agencies, federal agencies, local agencies, and environmental organizations, including US Fish and Wildlife service and the New Mexico State Historic Preservation Office.

XIII. APPENDICES

Appendix A References

Appendix B Definitions

Appendix C Species Lists

Appendix D NEPA and NHPA Compliance (Environmental Assessment)

Appendix E Five-Year Fuels Treatment Plan

Appendix F Cooperative and Interagency Agreements

Appendix G Minimum Impact Suppression Tactics (MIST)

Appendix H Delegation of Authority for IMTs

Appendix A

References

National Park Service. 2001. Fire Monitoring Handbook. 2001.

National Park Service. 2002. Directors Order #18 – Wildland Fire Management. November 19, 2002. 10 pp.

National Park Service. 2002. Reference Manual #18 – Wildland Fire Management. Version 3.0. November 5, 2002. ___ pp.

NPS – GILA CLIFF DWELLINGS NATIONAL MONUMENT. 1986. “Statement for Management – Gila Cliff Dwellings National Monument, New Mexico.” April 1986.

NPS- GILA CLIFF DWELLINGS NATIONAL MONUMENT. Resource Management Plan for Gila Cliff Dwellings National Monument.”

NPS – GILA CLIFF DWELLINGS NATIONAL MONUMENT. 1989. “Statement for Management – Gila Cliff Dwellings National Monument.” August 1989 Draft.

USDI/USDA Forest Service. 1998. Wildland and Prescribed Fire Management Policy: Implementation Procedures and Reference Guide. 9 (“Interagency Reference Guide”) August 1998. 82 pp.

USDI/USDA. 1995. Federal Wildland Fire Management Policy and Program Review. Final Report. December 18, 1995. 45 pp.

USDI/USDA. 2001. A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment. 10-year Comprehensive Strategy. August 2001. 21 pp.

USDI/USDA. 2001. Review and Update of the 1995 Federal Wildland Fire Management Policy. January 2001. 77 pp.

USDI/USDA. 2002. A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment. 10-year Comprehensive Strategy. Implementation Plan. May 2002. 27 pp.

USFS. 1986. Gila National Forest Plan. USDA, USFS, Southwestern Region. September 1986.

USFS. 1993. Gila and Aldo Leopold Wilderness Areas Prescribed Natural Fire Plan/Environmental Assessment and Finding of No Significant Impact. Available from Gila National Forest, Wilderness Ranger District, Silver City, NM.

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix B

Definitions

Appropriate Management Response - Specific actions taken in response to a wildland fire to implement protection and fire use objectives. This term is a new term that does not replace any previously used term.

Behave Plus – A system of interactive computer programs for modeling fuels and fire behavior.

Burning Period - A 24 hour period beginning at 10:00 a.m. and ending at 10 a.m. the following day.

Chain - Unit of measure used in land survey equal to 66 feet. Commonly used to report fire perimeters and rates of spread

Ecosystem - An interacting system of interdependent organisms and the physical set of conditions upon which they are dependent and by which they are influenced.

Fire Management Unit - A distinct part of park that can be recognized and mapped from its external features.

Fire Dependent or Fire Maintained Ecosystem - An ecosystem in which periodic fire is essential to the functioning of the system.

Fire Management Plan - A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans and prevention plans.

Fire Monitoring - The act of observing a fire to obtain information about its environment, behavior, and effects in order to evaluate the fire and its prescription.

Fire Use – The combination of *wildland fire use* and *prescribed fire* application to meet resource objectives.

Fire Weather - Weather conditions that influence fire ignition, behavior and suppression.

Fuel Loading - Amount of dead & live fuel present on a particular site at a given time.

Fuel Model - A simulated fuel complex containing fuel descriptors to estimate rate of spread of fire.

Holding Actions - planned actions required to achieve wildland and prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions. For prescribed fires, these actions are developed to restrict the fire inside the planned burn unit. For suppression actions, holding actions may be implemented to prohibit the fire from

crossing containment boundaries. These actions may be implemented as firelines are established to limit the spread of fire.

Ignition Specialist -A person trained and experienced in ignition methods and equipment.

Initial Attack - Action taken by the first resources to arrive at a wildland fire to meet protection and fire use objectives.

Mixing Height - Height a column of smoke will rise in the atmosphere.

Mop Up - Extinguishing or removing burning material near control lines to make the area safe or to reduce residual smoke.

National Fire Danger Rating System – A system of models that estimate the fire danger for various fuel models throughout the United States.

Normal Fire Year – The normal fire year for suppressed wildland fires is the year with the third highest number of wildland fires in the past ten years of record. The normal wildland fire managed for resource benefits year is the year with the third highest number of acres burned by wildland fire managed for resource benefits in the past ten years of record.

Planned Ignition - A wildland fire ignited by management actions to meet specific objectives.

Preparedness - Activities that help to provide a safe, efficient and cost effective fire management program in support of land and resource management objectives through appropriate planning and coordination.

Prescribed Fire - Skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that will allow confinement of the fire to a predetermined area and at the same time will produce the intensity of heat and rate of spread required to accomplish certain objectives of wildlife management, and hazard fuel reduction. Prescribed Fire Plan - a plan required for each fire application ignited by managers. It must be prepared by qualified personnel and approved by the appropriate Agency Administrator prior to implementation. Each plan will follow specific agency direction and must include critical elements described in agency manuals. Formats for plan development vary among agencies, although content is the same.

Prescription - Measurable criteria, which define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social or legal considerations.

Rate of Spread - The relative activity of a fire extending its horizontal dimensions, expressed as rate of increase in perimeter, rate of increase in area, or rate of advance of its flaming front. Generally expressed in chains per hour.

Suppression - A management action intended to protect identified values from a going fire, extinguish a fire, or alter a fire's direction of spread.

Unplanned Ignition - A wildland fire not ignited by management actions.

Wildland Fire - A free-burning fire; all fire other than prescribed fire that occurs on wildland vegetations.

Wildland Fire Management - All activities related to the prevention, preparedness, suppression of fire burning through vegetation.

Wildland Fire Situation Analysis - A decision-making process that evaluates alternative management strategies against selected environmental, social, political, and economic Wildland Fire - Any non-structure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires.

Wildland Fire Suppression - an appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources.

Wildland Fire Use – The management of naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in FMP's. Operational management is described in the Wildland Fire Implementation Plan. Wildland fire use is not to be confused with "fire use," which is a broader term encompassing more than just wildland fires.

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix C

Species Lists

Species likely to be found in the Gila Cliff Dwellings National Monument and surrounding USFS lands are described in the EA – Table 6, page 29. In addition the following species lists are available from the USFS:

- 1995 “Fish, Amphibians, Reptiles, and Mammals – A Species Checklist for the Gila National Forest.” USDA, USFS, Southwestern Region. September 1995.
- 1999 “Birds of the Gila National Forest: A Checklist.” USDA, USFS, Southwestern Region. July 1999.

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix D

NEPA and NHPA Compliance

(Environmental Assessment – See Attached Compact Disk)

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix E Five-Year Fuels Treatment Plan

State	Region	Alpha	WUI or HF	Fiscal Year	Project Name	Activity Type	Treat Type	Fire Regime	Condition Class	NEPA	Target Acres
NM	IMR	GICL	HF	FY06	Cliff Dweller Canyon	Treatment	Mechanical	I	3	Within FMP NEPA	9
NM	IMR	GICL	HF	FY07	South Ridge Top	Treatment	Mechanical	I	3	Within FMP NEPA	4
NM	IMR	GICL	HF	FY08	West Fork Drainage	Treatment	Mechanical	I	3	Within FMP NEPA	3
NM	IMR	GICL	HF	FY09	North Ridge	Treatment	Mechanical	I	3	Within FMP NEPA	4
NM	IMR	GICL	HF	FY10	TJ	Treatment	Mechanical	I	3	Within FMP NEPA	4

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix F
Cooperative and Interagency Agreements

THIS PAGE INTENTIONALLY LEFT BLANK.

Appendix G

M.I.S.T. GUIDELINES MINIMUM IMPACT SUPPRESSION TACTICS

Safety

Safety is of utmost importance. Constantly review and apply the “Watch out Situations” and “Fire Orders.” Be particularly cautious with:

- § Unburned fuel between you and the fire.
- § Burning snags allowed to burn.
- § Burning or partially burned live and dead trees.

Be constantly aware of surroundings; anticipate fire behavior and possible fire perimeter 1 or 2 days hence.

Fire Line Phase

Select procedures, tools, equipment that least impact the environment.

Seriously consider use water as a fireline tactic. Fireline constructed with nozzle pressure, wet lining.

In light fuels, consider:

- § Cold trail line.
- § Allowing fire to burn to natural barrier.
- § Burning out and use of “gunny” sack or swatter.
- § Constantly rechecking cold trailed fireline.
- § If constructed fireline is necessary, using minimum width and depth to check fire spread.

In medium/heavy fuels, consider:

- § Using natural barriers and cold trailing.
- § Cooling with dirt and water, and cold trailing.
- § If constructed fireline is necessary, using minimum width and depth to check fire spread.
- § Minimizing bucking to establish fireline. Preferably move or roll downed material out of the intended constructed fireline area. If moving or rolling out is not possible, or the downed bole is already on fire, build line around and let material be consumed.

In aerial fuels—brush, trees, snags:

- § Adjacent to fireline: limb only enough to prevent additional fire spread.
- § Inside fireline: remove or limb only those that if ignited would have potential to spread fire outside the fireline.
- § Brush or small trees that are necessary to cut during fireline construction will be cut flush with the ground.

In trees, burned trees, and snags:

- § Minimize cutting of trees, burned trees and snags.
- § Live trees will not be cut, unless determined they will cause fire spread across the fireline or endanger workers. If tree cutting occurs, cut the stumps flush with the ground.
- § Scrape around tree bases near fireline if hot and likely to cause fire spread.
- § Identify hazardous trees with an observer, flagging, and/or glow sticks.

When using indirect attack:

- § Do not fall snags on the intended unburned side of the constructed fireline, unless they are safety hazard to crews.
- § On the unintended burn-out side of the line, fall only those snags that would reach the fireline should they burn and fall over.
- § Consider alternative means to falling, i.e., fireline explosives, bucket drops.
- § Review items listed above (aerial fuels, brush, trees, and snags).

Mop-up Phase

Consider using “hot-spot” detection devices along perimeter (aerial or hand-held).

Light fuels:

- § Cold trail areas adjacent to unburned fuels.
- § Do minimal spading; restrict spading to hot areas near fireline.
- § Use extensive cold trailing to detect hot areas.

Medium and heavy fuels:

- § Cold trail charred logs near fireline; do minimal scraping or tool scarring.
- § Minimize bucking of logs to check for hot spots or extinguish the fire.
- § Return logs to original position after checking or ground is cool.
- § Refrain from making bone yards; burned/partially burned fuels that were moved should be arranged in natural position as much as possible.
- § Consider allowing larger logs near the fireline to burnout instead of bucking into manageable lengths. Use lever, etc., to move large logs.

Aerial fuels- brush, small trees, and limbs.

- § Remove or limb only those fuels that if ignited, have potential to spread outside the fireline.

Burning trees and snags.

- § See Section B.

**Appendix H
Sample Delegation of Authority for IMT's**

Delegation of Authority
National Park Service
Gila Cliff Dwellings National Monument

As of 1800, May 20, 2005, I have delegated authority to manage the _____ Fire, Fire Number 0501, Gila Cliff Dwellings National Monument, to Incident Commander _____ and his Incident Management Team.

The fire, which originated as a lightning strike occurring on May 17, 2005, is burning in the Gila River Drainage. My considerations for management of this fire are:

1. Provide for firefighter and public safety.
2. Manage the fire with as little environmental damage as possible. The guide to minimum impact suppression tactics (MIST) is attached.
3. Key cultural features requiring priority protection are: Cliff Dweller Canyon and the TJ ruins site.
4. Key resources considerations are: protecting endangered species by prohibiting retardant and foams from being used on any fire in the monument. Restrictions for suppression actions include: no vehicles on monument lands, except where roads exist and are identified for use. No retardant will be used on monument lands.
5. Minimum tools for use are Type 2/3 helicopters, chainsaws, hand tools, and portable pumps.
6. My agency Resource Advisor will be _____(wildlife biologist).
7. Manage the fire cost-effectively for the values at risk.
8. Provide training opportunities for area personnel to strengthen organizational capabilities.
9. Minimum disruption of visitor services, and visitor use consistent with public safety.

Superintendent, Gila Cliff Dwellings National Monument

Date

Amendment to Delegation of Authority:

The Delegation of Authority dated May 20, 2005, issued to Incident Commander _____ for the management of the _____ Fire, number 0501, is hereby amended as follows. This will be effective at 1800, May 22, 2005.

3. Key cultural features requiring priority protection are: Cliff Dweller Canyon, TJ ruins site and _____.

Superintendent, Gila Cliff Dwellings National Monument

Date

THIS PAGE INTENTIONALLY LEFT BLANK.