

FIRE MANAGEMENT PLAN
WHITE SANDS NATIONAL MONUMENT, NEW MEXICO

Prepared by:
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Approved by: _____

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Date:

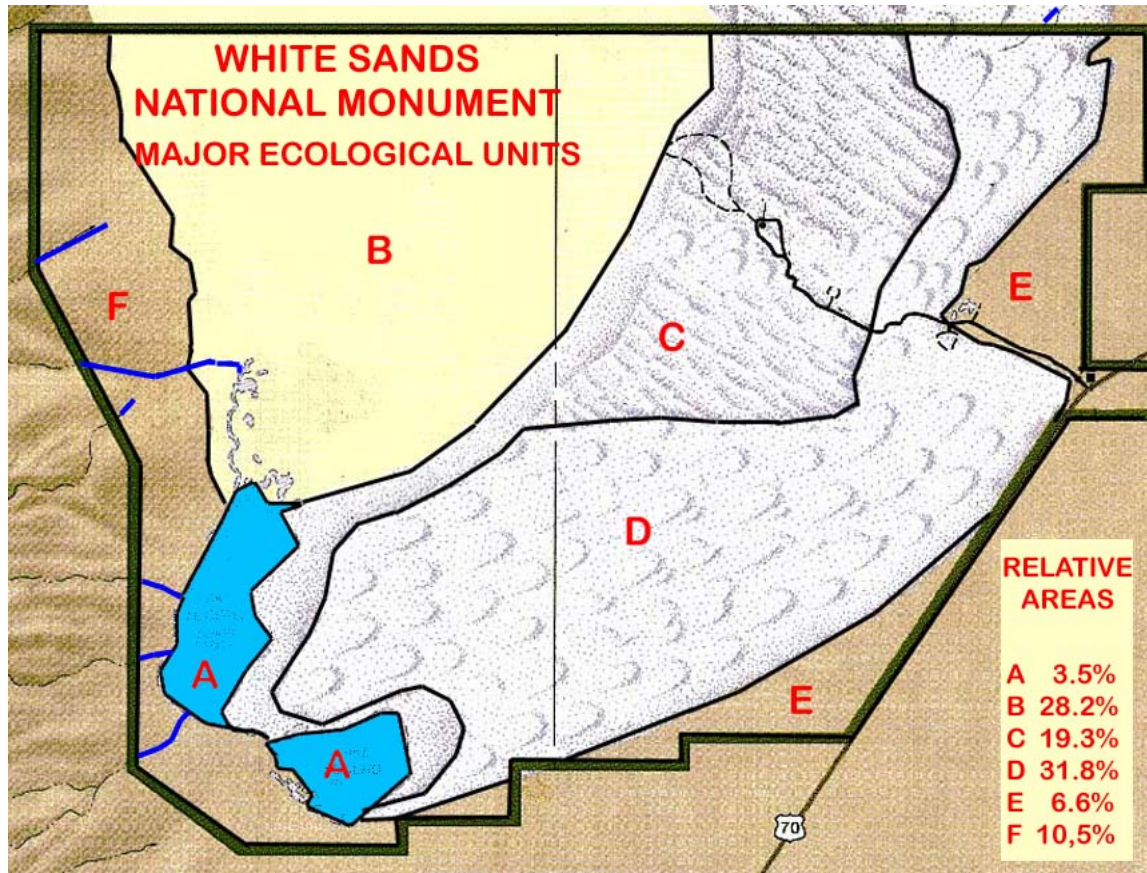


View from roof of visitor center in 1939.



View from roof of visitor center in 2002. Note change of vegetation to dense fourwing saltbush

VEGETATION AND LAND AREA
WHITE SANDS NATIONAL MONUMENT



A: Lake Lucero Playa	3.5%	5,100 acres
B: Alkali Flats	28.2%	40,600 acres
C: Sparsely Vegetated Dunefield	19.3%	27,800 acres
D: Semi-vegetated Dunefield	31.8%	45,800 acres
E: Grass/saltbush Shrubland	6.6%	9,600 acres
F: Creosote/mesquite/grass Shrubland	10.5%	<u>15,100 acres</u>
TOTAL		144,000 acres

TABLE OF CONTENTS

- I. Introduction
- II. Relationship To Land Management Planning And Fire Policy
- III. Fire Management Strategies
- IV. Fire Management Program Components
- V. Organization And Budget
- VI. Monitoring And Evaluation

LIST OF TABLES

- Table 1: Burning Index and Staffing Class
- Table 2: Fire Spread and Intensity Characteristics
- Table 3: Historical Natural Fire Regimes
- Table 4: Fire Regime Current Condition Class Descriptions

LIST OF FIGURES

- Figure 1: Vegetation and Land Map

APPENDICIES

- Appendix A: Environmental Assessment
- Appendix B: National Historic Preservation Act Compliance
- Appendix C: Minimum Impact Suppression Tactics
- Appendix D: Interagency Contacts
- Appendix E: Cooperative Agreements
- Appendix F: Wildland Fire Management Situation
- Appendix G: Records/Reports
- Appendix H: Full Suppression FMU Objectives and Constraints
- Appendix I: Preparedness Actions

ACRONYMS USED

DO-18: Director's Orders 18, Wildland Fire Management
FEMO: Fire Effects Monitor
FIREPRO: (NPS) Fire Program
FMO: Fire Management Officer
FMP: Fire Management Plan
FPA: Fire Program Clerk/ Assistant
FUMA: Fire Use Manager
IPRG: Wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide
MMA: Maximum Manageable Area
NFDRS: National Fire Danger Rating System
PFM: Prescribed Fire Monitor
RAWS: Remote Automatic Weather Station
RM-18: Wildland Fire Management Reference Manual
RMP: Resource Management Plan
SACS: Shared Application Computer System
WFIP: Wildland Fire Implementation Plan
WFSA: Wildland Fire Situation Analysis
WFURB: Wildland Fire Use for Resource Benefit

DEFINITIONS

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

Prescribed Fire: Any fire ignited by management action to meet specific objectives. This term replaces management ignited prescribed fires. A written, approved prescribed burn plan must exist, and environmental requirements must be met prior to ignition.

Wildland: Any monument natural landscape not maintained for buildings, road, or fence.

Wildland Fire: Any non-structural fire, other than a prescribed fire, that occurs in wildland. This term encompasses fire previously called both wildfire and prescribed natural fire.

I. INTRODUCTION

All units of the National Park Service with vegetation capable of sustaining fire are required to develop a Fire Management Plan. This plan describes in as detailed a manner as possible those actions that will be taken by White Sands National Monument in meeting the fire management goals for the area.

An environmental assessment (EA) was completed in 2003 with a Finding Of No Significant Impact Statement (FONSI) signed in 2004 for compliance with the National Environmental Policy Act of 1969. This EA is included as Appendix A. Compliance with the National Historic Preservation Act and consultation with the New Mexico State Historic Preservation Office is documented in Appendix B.

Prescribed burns will have site specific compliance work completed prior to project implementation. This will include biological assessments and cultural/historical site surveys as appropriate.

The fundamental authority for implementation of natural resource and fire management programs in America's national parks can be found in the National Park Service Organic Act (Act of August 25, 1916), which states the agency's purpose:

...is to conserve the scenery and the natural and historic objects and the wild life 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.

This authority was further clarified in the National Parks and Recreation Act of 1978:

Congress declares that...these areas, though distinct in character, are united...into one national park system.... The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by congress.

The National Park Service (NPS) *Wildland Fire Management Director's Orders #18* reiterates that "all parks with vegetation that can sustain fire must have a fire management plan" and that this plan must "relate to the Resource Management Plan and help achieve resource management objectives." It further cites from the Department of the Interior Departmental Manual (910 DM) the statutes which authorize the prevention, preparedness, and suppression of wildland fires on or threatening lands under the jurisdiction of the United States Department of the Interior (USDI).

II. RELATIONSHIP TO LAND MANAGEMENT PLANNING AND FIRE POLICY

A. NPS Management Policies Concerning Fire Management

From the guiding principles of the *Federal Wildland Fire Management Policy and Program Review Final Report* (December, 1995):

Firefighter and public safety is the first priority in every fire management activity

The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process

From the *National Park Service Management Policies, 2001*:

Natural resources will be managed to preserve fundamental physical and biological processes, as well as individual species, features, and plant and animal communities. The Service will not attempt to solely preserve individual species (except threatened or endangered species) or individual natural processes; rather, it will try to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and genetic and ecological integrity of the plant and animal species native to those ecosystems. Just as all components of a natural system will be recognized as important, natural change will also be recognized as an integral part of the functioning of natural systems. By preserving these natural components and processes in their natural condition, the Service will prevent resource degradation, and therefore avoid any subsequent need for resource restoration. In managing parks to preserve naturally evolving ecosystems, and in accordance with requirements of the National Parks Omnibus Management Act of 1998, the Service will utilize the findings of science and the analyses of scientifically trained resource specialists in decision-making.

Fire is the most aggressive form of resource management practiced in national parks. Prescribed fires and wildfires with their associated suppression impacts have potential to drastically alter parks for hundreds of years. Management actions (or the lack thereof) taken in regard to either of them may be the most significant actions taken by park management in regard to their resources. Every fire is significant if you consider the perpetual management of park.

B. Enabling Legislation and Purpose of White Sands National Monument

White Sands National Monument was established by Presidential Proclamation No. 2025 of January 18, 1933 (47 Stat. 255). It was therein stated that, "...for the preservation of the white sands and additional features of scenic, scientific, and educational interest...do proclaim and establish the White Sands National Monument..."

C. Goals of the White Sands National Monument Plans

A *Final Master Plan* was approved in 1976 to guide park development and land use. Parks typically have general management plans, which are revised every 10-20 years, however the *Final Master Plan* is the most current approved general planning document for White Sands National Monument. It describes in general terms the importance of maintaining naturally functioning ecosystems and protecting natural and cultural resources.

A *Resource Management Plan For White Sands National Monument (RMP)* approved in 1995, stating basic resource management goals for White Sands National Monument including:

- Understanding, preserving and documenting the monument's natural and cultural resources.
- Maintaining the natural processes that form the dunes, playas, other habitats and geological and biological processes and systems.

When the RMP was written in 1995, there was little understanding of the extent of ecosystem

disturbance of the monument and conversion of grassland to shrubland, as is now generally recognized across southern New Mexico and the Chihuahuan Desert in general. As the result, the RMP does not recognize the importance of grassland or the potential role the fire may have played in early historic times. This process is explained with supporting literature references in the document *Environmental Assessment/Assessment of Effect, Wildland Fire Management Plan, White Sands National Monument, New Mexico* (2003). See appendix A.

Fire once played important roles in the functioning of northern Chihuahuan Desert ecosystems. Far from being a negative and destructive force, naturally occurring fires have helped to shape the landscape over time. 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 all fires from an ecosystem deprives that system of a powerful and dynamic natural force. The ultimate goal of fire management in the National Park System is to restore fire to park ecosystems where possible through wildland fire use and prescribed fires.

The presence in and adjacent to the park, of people, modern-day human developments, and cultural and historic resources, require that the protection of life and property be a primary concern. Mechanical hazard fuel reduction and also treatment with prescribed fire will be implemented to prevent loss of life or damage to resources and escape of park wildland fires to adjacent lands.

D. How the Fire Management Plan will Help Meet White Sands National Monument's Management Plans

Implementation of the *Fire Management Plan* will support White Sands National Monument's *Final Master Plan* and *Resource Management Plan* by providing the opportunity to use fire as a management tool to promote better scientific understanding and naturally functioning ecosystem conditions.

III. WILDLAND FIRE MANAGEMENT STRATEGIES

A. General Management Considerations

Wildland fire is a relatively rare event at White Sands National Monument, occurring approximately 5-10 times per decade. Lightning strikes are frequent during the storm season of July and August, however rarely hit vegetation that will sustain fire. Human-caused ignitions occur from vehicle fires and military aircraft/missile crashes. Due to large areas of little or no vegetation, and due to conversion from grassland to fire resistant shrubland, less than five percent of park land has vegetation that will sustain a fire, and any fire would most likely be contained to a few acres by natural fuel breaks. The park had a simple in-house policy of immediate suppression of all wildland fires. Due to lack of understanding of past ecological conditions, there was no interest in prescribed fire for research and ecological restoration.

This plan describes a dual program of suppression of all wildland fires using a policy of Appropriate Management Response with a major emphasis on firefighter and public safety, efficiency, and economy. Appropriate Management Response may entail merely monitoring the fire, using natural fuel breaks, and allowing the fire to burn out. More aggressive action near structures and sensitive cultural sites may require wet lines and fireline construction. The plan also provides for use of prescribed fire as both an ecosystem and fuel management tool.

Wildland Fire Use for Resource Benefit (WFURB) was considered but rejected as a management alternative for wildland fire ignitions. The requirement for a high level, qualified and specialized decision maker during summer fire season was considered unrealistic for rare lightning ignited fires, which typically quickly burn out due to sparse desert vegetation.

B. Wildland Fire Management Goals

Goal: Make firefighter and public safety the highest priority of every fire management activity.

Objective: Ensure that all wildland fire, prescribed fire, or related fire management operations cause no injuries to firefighters or to the public.

Strategies:

- Prior to any fire management operation all personnel involved will receive a safety briefing describing known hazards (i.e. unexploded ordnance (UXO), hazardous materials from crashed military aircraft and missiles), and mitigation actions and Lookouts, Communications, Escape routes, and Safety zones, current fire season conditions, and current and predicted fire weather and behavior.
- Only qualified individuals that promote the safe and skillful application of fire management strategies and techniques will carry out fire management operations.
- Park neighbors, park visitors and the local residents will be notified of all planned and unplanned fire management activities that have the potential to impact them (Holloman Air Force Base and White Sands Missile Range air traffic control and natural/cultural resource managers).
- All or portions of the Park will be closed to the public when fire activity poses a threat to human safety (at the discretion of the Superintendent).

Goal: Suppress all wildland fires regardless of ignition source to protect the public, stop fire spread onto adjacent property, and protect the natural, cultural and historic resources of the park.

Objective: Staff and monitor wildland fires in the initial attack phase (i.e. within 24 hours of ignition).

Strategies:

- Staffing and monitoring without aggressive suppression will be considered a form of suppression.
- Prioritize suppression actions on fires or portions of fires that threaten to damage public property.
- Ensure Park staff responsible for fire operations understands fire policy.
- Ensure there are adequate suppression resources on scene to check fire spread.

Goal: Manage wildland fires so that park resources (natural, cultural, and improvements) are protected from damage by suppression actions and/or fire.

Objective: Manage suppression actions to minimize impacts on sensitive resources.

Strategies:

- Ensure wildland fire suppression operations employ Minimum Impact Suppression Tactics (MIST). See appendix C.
- Ensure fire operations personnel are briefed on Park resources and potential damage from fire and suppression actions.

- Ensure commencement of timely rehabilitation of any suppression impacts.

Goal: Reduce wildland fire hazard around developed areas, along interface boundary areas and adjacent to cultural and historic sites.

Objective: Ensure fire does not destroy any administrative structure, nor incur costly damage to any cultural or historic site.

Strategies:

- Apply mechanical hazard fuel reduction where appropriate around vulnerable cultural and historic sites for protection from fire damage
- Implement hazard fuel reduction burns where appropriate or mechanical fuel reduction around suppression zones to reduce intensity of subsequent unwanted wildland fires.

Goal: Facilitate reciprocal fire management activities through the development and maintenance of cooperative agreements and working relationships with pertinent fire management entities.

Objective: Annually review and modify as necessary agreements with the agencies listed below.

Strategies: Continue to pursue interagency fire planning, and continue to coordinate all wildland fire management operations with the following entities:

- Holloman AFB Fire Department
- White Sands Missile Range Fire Department
- Alamo West Volunteer Fire Department
- Las Cruces Field Office, Bureau of Land Management
- Lincoln National Forest, US Forest Service

C. Wildland Fire Management Options

Wildland Fires

A wildland fire is any unplanned fire. It may be caused by natural ignition such as lightning, or by human-caused ignitions such as vehicle fires or military aircraft/missile crashes.

All wildland fires will be suppressed using an appropriate management response. Management responses to specific wildland fires will be determined through local evaluation of public and firefighter safety, fire behavior, fuel loading, natural fire breaks, risk of escape from NPS land, values at risk, potential suppression damage, and availability of fire management resources. Management responses will vary from fire to fire and sometimes even along the perimeter of a fire. Appropriate management response options range from monitoring without on-the-ground disturbance to intense suppression actions on all perimeters of the fire.

Prescribed Fires

A prescribed fire is any fire ignited by management action to meet specific objectives. The term replaces “management ignited prescribed fire.” A written and approved prescribed burn plan must be completed and pre-defined environmental conditions met prior to ignition. Approval will be required by

the superintendent, area fire management officer, with consultation by the New Mexico State Preservation Office.

Prescribed fire may be used in support of ecosystem research and management to maintain and/or restore plant communities, recycle nutrients, reduce or remove exotic plants, and for a variety of other resource management objectives. All prescribed fire for ecosystem management purposes will include a well-documented monitoring plan to show that results are consistent with management objectives.

Prescribed fire may be used for hazard fuel reduction in the developed areas of the monument such as the Visitor Center/Headquarters complex, or along the boundary fence and near cultural resource sites. The intent is to reduce wildland fire hazard to levels that enable local wildland fire suppression forces to control fires with minimal loss of values to be protected.

D. Description of Wildland Fire Management Strategies by Fire Management Units (FMU)

The entire area of White Sands National Monument will be managed as one fire management unit (FMU). This includes significant infrastructure such as the visitor center complex and boundary fence. Less than 5 percent of the total 144,000 acres of the monument would sustain fire. Patches of vegetation that would carry fire are small (usually less than 10 acres) and are surrounded by natural fuel breaks.

The White Sands Missile Range (WSMR), Holloman Air Force Base (HAFB) border most of the monument, and Bureau of Land Management (BLM) land borders one mile of boundary across a paved two-lane road. There is no private land within or adjacent to the monument. Two military sites, Andres Commo and Navy Vandal launch site, are adjacent to the west boundary.

Within the monument FMU all wildland fires will be suppressed using an appropriate management response with the intent of minimizing loss of structures, property, and minimum resource impact. The first priority during these suppression actions will be the safety of firefighters and the public, including adjacent landowners.

IV. WILDLAND FIRE MANAGEMENT PROGRAM COMPONENTS

A. Wildland Fire Suppression

Range of Potential Fire Behavior

Fire behavior in the park can range from stationary to fast moving surface fires in light fuels.

Pre-attack Plan

Due to the small size and scope of the fire program at White Sands National Monument, no formal pre-attack plan has been written. Certain preparations and procedures are however established prior to and during the fire season. Some are mentioned in the Annual Preparedness Activities section, other pre-attack plans are informally discussed among the red-carded fire fighters.

Initial Attack

Fires occurring near significant infrastructure will be of higher priority than fires occurring in remote areas of the monument. The following will be used to set priorities elsewhere.

- **Cultural and historic site map**
- **Park facility map**

Criteria for appropriate initial attack response consistent with GMP/RMP objectives:

- **Public and firefighter safety**
- **Protection of cultural, historic, and natural resources, with Cultural Resource Specialist involved in all decision making**
- **Protection of improvements and private property**
- **Minimum fireline construction**
- **Available suppression resources and response times**
- **Fire danger as determined by fuels, weather, and topography**
- **Use aircraft and mechanized equipment only where necessary to support above-listed criteria**
- **A confinement strategy may be selected for initial attack as long as it is not being used solely to meet resource management objectives.**
- **Resource benefits may be a by-product, but the strategy must be based upon the criteria listed above.**
- **A confinement strategy may also be selected in the WFS process when initial attack has failed to contain a wildland fire. When confinement is selected as the initial action, the same management process applies as for wildland fire use decisions. A WFIP will be prepared in stages as the fire management conditions change and associated considerations require additional attention.**

Typical fire response times at White Sands National Monument vary depending on the staffing at the Park, fire management activity in the local area, and time of day. During fire season when no other fire activity is occurring and staffing is available, the White Sands National Monument water tank truck can respond to the closest road access to fires within one hour. Reinforcements from other agencies within the Lincoln Zone can respond to closest road access to a fire within two hours. Air tanker and helicopter attack can reach a fire within 30 minutes. Reinforcements from outside the Lincoln Zone dispatch area cannot be counted on arriving any sooner than eight hours after request.

Restrictions and special concerns by management area (FMU).

See Chapter IV of this plan for more detail.

Escaped prescribed fires

Information that should be used to set incident priorities:

- Restrictions in areas of special concern
- Implementation plan requirements
- Social and political concerns
- Decision criteria matrix or flowchart including the risk assessment process
- Complexity decision process for transition from IA to extended action
- Park example of delegation of authority

Extended Attack and Large Fire Suppression

Extended attack needs will be determined by considering the following:

- Threats to life, property, and Park resources
- Availability of suppression forces
- Current and expected fire behavior

Follow guidance in Wildland and Prescribed Fire Policy, Implementation Procedures Reference Guide and RM-18, Chapter 9.

Minimum Impact Suppression Tactics (MIST)

- Complete minimum impact guidelines are listed in Appendix C.
- All fire management activities in White Sands National Monument will rely on tactics which do a minimum amount of resource damage while maintaining the safety of firefighters, personnel and the public as the highest priority.
- Superintendent approval is needed for off road use of vehicles and bulldozers, mechanized equipment, retardant, and low flying aircraft.

Rehabilitation

All suppression activities will be carried out in such a manner as to cause the least amount of resource damage. After the fire is declared out, all litter and trash will be removed. Constructed firelines will be refilled and erosion control devices installed if necessary. Stumps, if present, will be flush cut. Logs and brush will be chopped and scattered or removed. The severity of the burn and its resultant impact will be considered in determining the need to seed or otherwise re-establish native plant species. Such efforts regarding landscaping and plants will be in full compliance with NPS Management Policies and given prior approval of the Regional Director. A rehabilitation plan, outlining what species are to be planted, techniques to be used, locations and cost estimates will be prepared before any action is taken.

B. Prescribed Fire Management

Prescribed Fire Goals and Objectives

Prescribed fire may be used to assist in meeting wildland fire suppression objectives by way of hazard fuel reduction projects, and for ecosystem research and restoration projects.

Goal: Use prescribed fire where and when appropriate as a tool to meet resource management objectives within the Park. Maintain or restore, where possible, the ecological conditions that occurred prior to European settlement.

Objective: Restore fire for research and ecosystem restoration within the next five years.

Strategies:

- Monitor the effects of fire on the ecosystem and adjust fire use and prescribed fire effects according to desired management objectives.
- Achieve resource objectives where possible such as reduction of shrub encroachment.
- Improve watersheds where possible by increasing herbaceous cover, which will reduce soil erosion.
- Increase native plant diversity and reduce exotic species occurrence.

Goal: Manage prescribed fire in concert with federal, state and local air quality regulations.

Objective: Ensure air quality thresholds for NAAQS are not exceeded and visual quality is not reduced in adjacent air sheds due to fire use activities.

Strategies:

- Impacts to air quality will be considered as a part of the go/no go decision in the Prescribed Fire Plan and through periodic assessment throughout the duration of any prescribed fire.
- Air quality objectives will be incorporated in each prescribed burn plan.
- Smoke impact mitigation measures will be developed and implemented for prescribed burn and all wildland fire actions.
- Alternative methods (e.g., mechanical, biological, etc.) to fire use will be analyzed prior to selecting fire use treatments.

Prescribed Fire Priority Areas

Grass Sites Invaded by Shrubs: Prescribed fire will reduce woody vegetation and stimulate grass. Benefits include increased fine plant material, reduced soil erosion, and increased species diversity. High priority areas are the grass/shrubland areas between the Cottonwood road (dirt road southwest of the administration building) and the dune front, and between the Dunes Drive road and dune front southeast of the Big Dune trailhead.

Post Settlement Mesquite/Saltbush Dominated Sites: Analyze soil, vegetation, prescribed fire, and cultural resources to determine site restoration potential. Benefits include restoration of grass community, increase wildlife habitat diversity, and reduce soil erosion.

Exotic Plant Areas: Prescribed fire may also be used to control invasive exotic plant species such as tamarisk trees (*Tamarix ramossisima*). Tamarisk pile burning may also be necessary following control projects.

Prescribed Fire Behavior

Prescribed fire behavior must support resource management objectives of individual burn units. A range of fire intensities will be required to meet burn unit objectives and vary according to site conditions. The months of March through June will be avoided for prescribed fire due to excessive heat for regrowth of alkali sacaton grass. Low humidity and high winds during this period also make burning conditions too hazardous. Ignition will be conducted primarily with hand drip torches.

Prescribed Fire Planning

The park superintendent must approve prescribed burn plans prior to igniting burn units. It is desirable to include within one burn plan multiple burn units that have similar vegetation types, burn prescriptions, and resource management objectives.

Prescribed fire units may vary in size but larger units are encouraged to promote landscape scale restoration. Prescribed fire unit boundaries should use the natural features (dune edges, etc.), natural fuel breaks (areas with sparse ground fuels) and existing roads and trails for perimeter control. However, interior control lines and mechanical fuel treatments (primarily cutting woody vegetation with chainsaws and scattering the debris) may be necessary to protect sensitive cultural and natural features from within the burn unit.

All prescribed fire plans must consider effects to cultural resources and comply with the National Historic Preservation Act. Consultation will be completed with the New Mexico State Preservation Office, prior to approval. The superintendent and the area fire management officer at Guadalupe Mountains National Park must approve the plan.

Personnel Needed to Plan and Execute the Prescribed Fire Program

Planning and execution of this prescribed fire management program will use qualified personnel and will follow the guidelines stated in document RM-18. Refer to RM-18 for guiding all aspects related to implementing this prescribed fire program.

Special note: Currently, White Sands National Monument does not have qualified staffing to implement the prescribed burn. The area fire management officer at Guadalupe Mountains National Park and adjacent federal agencies must be relied upon for assistance in planning and implementing each of the prescribed burns.

Prescriptions for Prescribed Fire Management at White Sands National Monument

Currently, White Sands National Monument has no prescriptions identified for fire management. These will be developed at a later date and added to the plan as an Appendix E.

Prescribed Fire Monitoring

White Sands National Monument will develop a short and long term monitoring program to measure attainment of prescribed fire objectives. Monitoring is essential for adaptive management, where qualitative and quantitative changes to resources are measured and used as a tool to guide modifications for subsequent prescription treatments and burn objectives.

Documentation Requirements

See RM-18 Chapter Ten, Prescribed Fire Plan Section.

Prescribed Fire Critique Format

There are no requirements for prescribed fire critiques. However, it is recommended that a critique be completed annually and/or for any prescribed fire with significant problems (escapes, failure to meet objectives, accidents and/or near misses, etc.). White Sands National Monument will critique all prescribed fire projects as soon as possible after the completion of the burn.

The prescribed burn boss will ensure that representatives of all resources are invited. The burn boss will also provide an outline of critique topics to all participants prior to holding the critique.

Focus the critique on identification of problems and not persons.

Consider the following critique elements:

- Did the burn plan follow policy?
- Was the burn plan implemented correctly (were any prescriptive elements violated)?
- Were burn plan objectives met?
- Were all personnel qualified to perform the tasks assigned to them?
- Were any accidents caused by failure to follow policy?

Solicit suggestions for improvements to planning and implementation of future prescribed burns.

Air Quality and Smoke Management

The subject of air quality and its effect on the resources of White Sands National Monument, as well as the park visitor's enjoyment of those resources, is of great concern to park managers and the local public. The quality of the airshed for the park and the surrounding basin is of great intrinsic value to the monument and of mission essential value to the nearby military facilities. The management of White Sands National Monument will pursue protection from impacts that might arise from pollution sources outside the park. In carrying out day-to-day operations, park staff has followed a policy of carrying out its internal operations in such a way as to have a minimum impact on all Park resources including air quality related values.

The fire management program for White Sands National Monument will be in full compliance with interstate, state, and local air pollution control regulations as required by the Clean Air Act, 42 U.S.C. _7418. Necessary state air quality clearances and permits from the New Mexico Environment Department-Air Quality Bureau will be obtained prior to the initiation of a prescribed fire. Smoke mitigation measures will be used that will take into account the special conditions present in the Tularosa Basin. A Simple Approach Smoke Estimation Model (or equivalent) analysis will be performed prior to all prescribed fires and will be utilized as needed during wildland fires. During prescribed fire activities smoke will be monitored for trajectory, mixing height, and impact to air quality sensitive areas.

All projects considering use of prescribed fire will evaluate feasible alternatives to fire that would achieve similar resource management objectives. Fire use would be implemented if other alternatives would not meet resource management objectives or would be too difficult to implement

Prescribed Burn Plan Requirements

Refer to RM-18 Chapter Ten and Wildland and Prescribed Fire Management Policy, Implementation Procedures Reference Guide.

Exceeding Prescribed Fire Plan

If burn prescription limits are exceeded during ignition, but the burn remains within unit boundaries, then containment actions must be taken. In some cases the best containment strategy will to complete firing of the unit or employ unit check-lines to avoid rapid runs at the unit boundary lines.

If the burn is declared an "escaped fire", then a WFSA must be completed and the appropriate management response will be utilized. Spot fires may not constitute an escape if they are contained within standards that are identified in the burn plan.

Information used to set incident priorities

Priorities for action if a fire requires a new strategy should be based first on safety of the public and firefighters. Other secondary priorities include protection of private property and monument resources and improvements. Locations of sensitive resources (archaeological sites and sensitive plants and

animals) can be identified from Resource Management staff and/or maps. Ranger and Maintenance staff should identify safety hazards.

The following maps will be available to burn bosses for setting priorities in the event a prescribed burn escapes:

- Cultural resource site map
- NPS and military facility map

Implementation Plan Requirements

Use the incident action plan or prescribed burn plan to develop organization. Use strategy and tactics that have been successful in the past. Take care to ensure Minimum Impact Suppression Tactics is not forgotten in the efforts to return the fire use action to prescription.

Social and Political Concerns

In addition to life, property, and resource concerns, there is a high degree of public concern with regard to ability of the National Park Service (and other federal agencies) to control fire use actions. Consequently, it is critical to bring escaped prescribed fires back under control as quickly as possible.

Delegation of Authority

Refer to RM-18, Chapter Nine, Exhibit 3.

Complexity Decision Process for Transitioning from Initial Attack to Extended Attack or Escaped Wildland Fire

Appropriate organizational levels will be identified through the Wildland Fire Implementation Plan or the Wildland Fire Situation Analysis process or by evaluation of in-park capabilities.

Non-Fire Fuel Treatment Applications

Fuel reduction around facilities such as the headquarters buildings and fence, or around vulnerable remote cultural resource sites, may be performed by hand crews or with mechanical equipment. All sites will have a cultural resource survey with appropriate compliance prior to approval. No specific work is considered at this time.

Emergency Rehabilitation and Restoration

Emergency rehabilitation would be no different than post-fire rehabilitation described above, due to flat or nearly flat terrain and lack of large watersheds concentrating surface runoff with flood hazard.

V. ORGANIZATION AND BUDGET

A. Organizational Structure of Park Fire Management Program

White Sands National Monument has a site-based fire management organization. The senior official is the Chief Ranger who serves as the site Fire Management Officer (FMO). The Cultural and Natural

Resource Management Specialists will provide expertise in their respective fields. The Chief of Interpretation serves as the Public Information Officer. Specially trained ranger, interpretive and maintenance employees will provide suppression services. The area FMO at Guadalupe Mountains National Park will provide oversight and assistance as needed.

B. FIREPRO funding

Currently, the area fire management officer stationed at Guadalupe Mountains National Park manages FIREPRO funding for White Sands National Monument. Funding is available for engine maintenance, personal protective gear for firefighters, and training funds (on an as needed and available basis).

C. Fire Management Organization in Relation to Park Organization

The Chief Ranger at White Sands National Monument is the site FMO for fire management. This entails coordinating with the Guadalupe Mountains FMO and White Sands National Monument natural and cultural resource management specialists on fire and resource management objectives, and all prescribed and wildland fire implementation actions.

D. Superintendent's Responsibility for Periodic Assessment Signature

Periodic assessments for all wildland fires must be approved (signed) by the superintendent. For additional information see wildland and Prescribed Fire Management Policy Implementation Procedures Reference Guide and RM-18, Chapter Nine.

E. Interagency Coordination

Interagency coordination and cooperation is integral to successful implementation of the fire management program at White Sands National Monument. Only small, slow-moving wildland fires can be managed within the current capabilities of White Sands National Monument. All other wildland and prescribed fires will require external support by interagency cooperators and/or other NPS units. Annual review of cooperative agreements will ensure successful coordination.

See appendix F for a listing of all interagency contacts.

F. Fire Related Agreements (copies in Appendix E).

See Appendix E for all interagency agreements.

VI. MONITORING AND EVALUATION

All prescribed fire monitoring activities at White Sands National Monument will follow guidelines in the NPS Fire Monitoring Handbook (FMH). A fire effects monitoring program must be initiated with the prescribed fire program. Long term monitoring will include the installation of permanent plots inside and outside burned sites to determine the effects of prescribed fire. Monitoring will determine if the quantifiable burn unit objectives have been achieved. Long term monitoring will also detect if the resource management objectives are being achieved, such as percent change in grass cover. Monitoring should focus on native grass responses to prescribed fires. Monitoring results will then be linked to adaptive management decisions.

A full time NPS fire ecologist is now available at Sul Ross State University in Alpine, TX. The ecologist is available to assist with all research and monitoring related to wildland fire in several national parks in West Texas and New Mexico. Fire effects monitors are available on an as needed, as available basis from several nearby national parks, such as Big Bend and Guadalupe Mountains.

Photo points are a very valuable site-monitoring tool and should be required for prescribed fire monitoring. The establishment of permanent photo points prior to a prescribed fire should be the absolute minimum monitoring procedure. The use of both FMH plots and photo points are effective monitoring methods.

All prescribed fires must include the appropriate number of prescribed fire monitors to record on site weather, smoke dispersal, fire behavior, and to collect data from FMH plots within the burn unit. A prescribed fire monitoring report will also be completed for each burn.

**APPENDIX A: ENVIRONMENTAL ASSESSMENT/ASSESSMENT OF EFFECT,
WILDLAND FIRE MANAGEMENT PLAN**

APPENDIX B: NATIONAL HISTORIC PRESERVATION ACT SUMMARY

RECOMMENDATIONS

The purpose of this report is to establish guidelines for wildfire and prescribed burn management.

National Park Service records indicate that there are 135 known prehistoric and historic cultural resources sites located within the monument and several hundred more undocumented sites may exist. Any time that an ignition occurs in the park efforts will be made to protect cultural resources with perishable materials. Extensive reconnaissance has been conducted and the possibility of unknown, perishable historic cultural resources occurring in the park is quite small. It is recommended that White Sands National Monument staff adopt the following guidelines with regard to wildfire ignitions and prescribed fire management.

1. As soon as a wildfire is detected, the Incident Commander will consult the park's archeologist and site atlas of previously identified heritage resources. Should sites with perishable resources be within or adjacent to the area of the wildfire, the Incident Commander will order the immediate initiation of measures to protect those resources.
2. The protective measures taken will depend upon several factors including both the nature of the perishable materials to be protected and the specific protective measures available to the Incident Commander. The Incident Commander has a wide variety of protective measures from which to choose such as backfiring in order to produce a zone of protection around the perishable cultural resources, the use of roads or natural features in order to shift the fire away from perishable cultural resources, along with the use of wet lines and foam, retardant drops, hand dug or bulldozer line. No off road vehicle use will occur unless approved by the Superintendent. No dozer or grader use will occur unless approved by the Superintendent.
3. The Incident Commander will immediately notify the White Sands Archeologist of the ignition. One purpose of this immediate notification is to ensure that if additional reconnaissance is warranted, it can begin immediately. The White Sands Archeologist will make that determination. If it is contemplated that fire lines are to be installed by hand or with the use of heavy equipment, provided that one is available, it will be necessary for an archeologist to be on the line with hand crew or the mechanized equipment.
4. The moment that a prescribed burn begins to leave its area of prescription, Guidelines 1-3 will be repeated.

Wildfires can have adverse effects on cultural resources given their accidental and unpredictable nature. These management practices used to suppress wildfires if used judiciously can have no adverse effect on cultural resources.

Individual prescribed fires and post-fire surveys and rehabilitation treatment activities will require separate consultation with the State Historic Preservation Office. Before there is prescribe fire or post fire rehabilitation, the monument staff must determine if there are significant sites in the burn area, establish protection measures for historic and cultural resource sites and must consult with the State Historic Preservation Office on site significance, effects and mitigation.

If these recommendations are followed the management activities for wildfire and prescribed fire will have a no adverse effect on cultural resource sites. This project complies with the National Historic Preservation Act of 1966, as amended and Executive Order 11593.

APPENDIX C: MINIMUM IMPACT SUPPRESSION TACTICS

Unplanned wildland fire suppression response would include immediate analysis and determination by staff that the fire is not a threat to the public or to structures, that the fire would not escape the monument and would be contained by natural and artificial barriers. If there is risk to the public, of damage to structures (including boundary fence), cultural resources, or of escape from the monument, then the appropriate management response would be to use aggressive fire suppression tactics. Incident response actions would be determined by the incident commander and fire safety considerations, and as guided by this plan and the Superintendent, or his/her representative. For fires that spread longer than a 24 hour period, a Wildland Fire Situation Analysis (WFSA) would be completed which would determine the acceptability of the chosen strategy. Minimizing firefighter exposure to risk, public and facility safety, sensitivity of specific or area resources, and cost of more aggressive action would be the guiding priorities in the WFSA, not acreage considerations. Smoke interference with adjacent military activities may also be a consideration in determining strategies. Communications and consideration of neighboring agencies would be maintained during the decision making process.

The appropriate management response for most lightning caused fires that are surrounded by natural barriers would be to monitor the fire and allow it to burn out, if not threatening the public, facilities, sensitive resources. In most cases these fires would quickly burn out due to lack of fuel. Missile caused fires may not be aggressively suppressed because of possible hazardous material risk to firefighters and due to remote locations.

- All fire management activities in White Sands National Monument will rely on tactics which do a minimum amount of resource damage while maintaining the safety of firefighters, personnel and the public as the highest priority.
- Appropriate Management Response includes staffing and monitoring, but may not require aggressive suppression if deemed no threat to structures, sensitive cultural sites, or escape from NPS land.
- Use natural fuel breaks instead of constructing fire line
- Superintendent approval is needed for off road use of vehicles and bulldozers, mechanized equipment, retardant, and low flying aircraft.
- Off-road vehicle use for wildland fire suppression discouraged but may be used
- Vehicles restricted to existing roadways for prescribed fire
- Cultural Resource Specialist involved and consulted on all actions
- Pre-burn survey of prescribed burn plots for cultural sites and mitigation of such sites
- Defending cultural sites from wildland fire as determined necessary by back fires or hose lines to avoid constructing fire line
- Burned areas later checked for exotic plant growth, with control action if necessary
- Avoiding months of March through June for prescribed fires due to excessive heat intensity for good regrowth of grass

INSERT cultural resources map

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APPENDIX D: INTERAGENCY CONTACTS

For prescribed fire during planning and prior to ignition, and for all wildland fire, contact the following:

County Sheriff dispatch office:.....	437-2210
Lincoln Zone:	434-7354
Holloman AFB air traffic control:	678-8000
Holloman AFB natural and cultural resource specialists:.....	572-3931
Holloman AFB security dispatch office:.....	572-7171
White Sands Missile Range control:.....	678-2222
White Sands Missile Range natural and cultural resource specialists:.....	678-2224
White Sands Missile Range security dispatch office:	678-1234
New Mexico Environment Department – Air Quality Bureau:	827-1494,
	955-8061
Alamo West Volunteer Fire Department	437-2210

APPENDIX E: COOPERATIVE AGREEMENTS

(INSERT ALAMO WEST AGREEMENT_____)

APPENDIX F: WILDLAND FIRE MANAGEMENT SITUATION

1) Historical Weather and Fire Season

The park does not maintain a fire weather station. However, weather data representing the park can be found with National Weather Service data for Holloman Air Force Base. The nearest fire weather station is the BLM maintained Dripping Springs Remote Activated Weather Station #292903. This is located on the west side of the Organ Mountains. Examination of available weather and occurrence data for the area shows that fire season extends generally from March to October although wildland fires have occurred during every month of the year.

The season of March through June is unsuitable for prescribed fire due to high winds and low humidity causing extreme burning conditions. This would increase hazard of escape and result in burns of excessive heat for good sacaton grass regrowth.

2) Fuel Characteristics and Fire behavior

Many of the reported fires occurred along travel ways, roads and trails. Ninety percent of the fires in the park were less than 0.1 acre in size. Very few of the reported fires were single trees or bushes ignited by lightning and a few lightning caused fires did burn several acres under full control suppression strategy.

There are two major fuel models represented in the Interface FMU. The typical fuel model resembles Fire Behavior Prediction System Fuel Model 1 (National Fire Danger Rating System Fuel Model L) with alkali sacaton grass as the primary carrier of the fire. There is also a considerable component of Four-Wing Saltbush in some areas and these areas could also be classified as FBPS Fuel Model 6 (NFDRS Fuel Model H). Fire spread and intensity characteristics under normal and extreme conditions are summarized below:

Table 2.—Fire Spread and Intensity Characteristics

Fuel Model	Rate of spread	Extreme Conditions*	
		Flame Lengths	Fire Characteristics
Fuel Model 1 (i.e. sacaton)	100+ ch/hr	5+'	Fires in this fuel model would move extremely fast. They would have a short residence time as these fuels are consumed rapidly.
Fuel Model 6 (i.e. saltbush)	88 ch/hr	10+'	Fires in this fuel type would also exhibit fast rates of spread. Again residence time is rather short as the larger woody fuels (saltbush) burn out fairly quickly.
Fuel Model	Rate of Spread	Normal Conditions	
		Flame Length	Characteristics
Fuel Model 1	20+ ch/hr	2+'	These fires will carry in sacaton but may not spread in the sparser grasses under normal conditions.
Fuel Model 6	15+ ch/hr	5+'	These fires will burn with more intensity and for that reason probably carry in most cases.

*Extreme is for eye-level wind speeds in excess of 20 MPH, 1 hr fuel moisture 3% and below.

**Normal is for eye-level wind speeds below 10 MPH, 1 hr fuel moisture 6% and above.

3) Fire regime alteration.

All Areas

The pre-European settlement fire regime can be characterized as frequent/low severity. Return intervals were likely under 10 years, causing topkill of most shrubs and succulents. A great deal of alteration in fire regime due to grazing and fire suppression has occurred in the plant associations of this FMU. (see F. below)

4) Control problems

As has been noted, under extreme conditions substantial resistance to control can be expected. Engines, possibly supplemented by air attack, are the only effective control tactic. Under normal conditions engines can normally gain control quickly.

5) FMU Values to be Protected and Special Concerns

- Infrastructure such as buildings in the developed area and the boundary fence.
- Any known T&E species sites will be acknowledged and mitigated for during prescribed burn operations.
- A special concern for this FMU is the reduction of hazardous fuels build-up along the park boundary.

e. Fire Regimes and Condition Classes at White Sands National Monument

The Historical Natural Fire Regime concept takes ecoregion, vegetation, fire frequency, fire intensity, and other empirical data (Heinselman, 1981; Schmidt, et al, 2002) and produces 5 categories of Fire Regime. (See Table 1.)

Table 3.—Historical Natural Fire Regimes (From Schmidt, et al, 2002)

CODE	DESCRIPTION
I	0-35 year frequency*, low severity**
II	0-35 year frequency, stand-replacement severity
III	35-100+ year frequency, mixed severity
IV	35-100+ year frequency, stand-replacement severity
V	200+ year frequency, stand-replacement severity

*Fire frequency is the average number of years between fires

**Severity is the effect of the fire on the dominant overstory vegetation

A. Fire Regime Current Condition Class

Fire Regime Current Condition Classes are a qualitative measure describing the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components such as species composition, structural stage, stand age and canopy closure, and fuel loadings. One or more of the following activities may have caused this departure: fire suppression, livestock grazing, introduction and establishment of exotic plant species, introduced insects or disease, or other management activities.

Table 4.—Fire Regime Current Condition Class Descriptions (From National Academy of Public Administration, 2002)

CONDITION CLASS and DESCRIPTION

Condition Class 1.--- Low Risk: Ecosystems in this fire class are mainly within their historical fire regimes. Fires within these ecosystems generally pose little risk and have a positive impact on the biodiversity as well as soil and water quality. However, there is a need for maintenance management in order to prevent these lands from degradation. Such maintenance can be achieved by fire use methods.

Condition Class 2.--- Moderate Risk: The risk of losing key ecological components due to occurrence of fire is moderate in this class. The fire regimes have been moderately altered from their historical range by decreased fire frequency, resulting in excessive accumulation of understory vegetation. If not treated, those fuel buildups might result in more intense fires that are more difficult and costly to suppress, and have negative impact on biodiversity as well as water and soil quality. Thus, fuel treatments, such as fire or thinning, are needed to restore the original condition of these lands and to reduce the risks of destructive wildland fires.

Condition Class 3.--- High Risk: Fire regimes have been significantly altered from their historical range, resulting in high risk of losing key ecosystem components if fire occurs. Fire return intervals have been increased or decreased by multiples, leading to dramatic changes in landscape patterns. Excessive accumulation of dead vegetation and large quantities of small trees that grow densely among the larger ones can lead to severe, high intensity wildland fires. Within this class, characteristic for short interval, fire adapted ecosystems, wildland fires damage not only all trees but also can lead to serious erosion and water contamination. Fire use methods should be used cautiously in those areas; prescribed fire should be done after mechanical or hand treatments, or during periods of benign fire behavior.

APPENDIX G: RECORDS/REPORTS

Wildland Fire Implementation Plan (WFIP)

A wildland fire implementation plan will be prepared for every wildland fire and will be the responsibility of the Site FMO or Incident Commander to have completed. A Wildland Fire Situation Analysis will be completed for any suppression fire that escapes initial attack.

Individual Fire Reports (DI-1202)

The basic report for documenting a wildland fire is the Individual Fire Report (DI-1202). The report is valuable as it provides an historical record of the fire regime for the park. As such, it is important that all fires that occur within the boundaries be documented using, at a minimum, this form. This includes fires that go out on their own when the location can be documented. The DI-1202 is the basic document used by the National Interagency Fire Program Center to document a fire occurrence. Incidents known as Support Actions where park personnel respond to fires outside the park (including out of state) are reported on this form. It is impossible for an individual to receive credit for jobs performed on any fire unless NIFC has a record of that fire from the park in the form of a DI-1202 and its attached Fire Number.

The Incident Commander for the fire is the person responsible for preparation of the Individual Fire Report. In most cases, this is the individual who put the fire out. That person may also want to complete a Case Incident Report for the fire but that would be in addition to the DI-1202. Fires will be sequentially assigned a fire number by calendar year, i.e. fires in 2001 are numbered 0101, 0102, etc.

A complete fire report will include the following attachments, if applicable:

- Any written policies, guidelines or authority statements signed by the Superintendent.
- Copy of the WFIP
- Copy of the WFSA, if completed
- Copies of equipment purchased or personnel request orders.
- All situation maps.
- Personnel lists (including Emergency Time slips.)
- Press clippings.
- Accident reports.
- All weather data reports and records.
- Documentation of financial charges made against the assigned PMP.
- Rehabilitation plan, if completed.

The report is then submitted, in draft, to the Fire Management Officer. Instructions for filling out the report are found in RM-18. That person will review the report for completeness. He/she will then enter the data into the park database for permanent record keeping. That procedure also prepares a final draft of the form for the files. The information will also be entered into the Wildland Fire Management Computer System. Finally, a copy of the DI-1202 will be sent to the Regional Fire Management Officer for record keeping.

Fire Experience and Qualifications

The Fire Management Officer is the person responsible for entering all training and experience into the computer and ensuring the information is up to date.

Smoke Management Reports

Smoke Management reports will be made by the Unit Fire Manager as agreed to in the MOU with the State of New Mexico and Federal Agencies.

Report of Fire

When a report of a fire is received, the following information should be collected from the reporting party:

- Name of reporting party
- Address
- Phone number
- Location of fire and extent
- If fire is reported in person, ask if the reporting party is willing to show the investigating ranger the location, otherwise, determine if the person can be re-contacted if there are additional questions.
- Fires reported to the Otero County Sheriff's office will be dispatched to the Alamo West VFD and White Sands National Monument per agreements with both entities.

Resource Order Form, NFES 1470

All assistance requests must be documented on the Resource Order Form, NFES 1470. These forms are designed to be transmitted verbally over the telephone. The order form is, in essence, an obligating procurement document.

Whenever an out-of-park incident management team is ordered, the Superintendent must provide a written limited delegation of authority and a briefing package to the incoming Incident Commander.

Year-end Accomplishment

Completion of year-end accomplishment reports is the responsibility of the Site Fire Management Officer or designee.

APPENDIX H: FULL SUPPRESSION FMU OBJECTIVES AND CONSTRAINTS

Full Suppression FMU objectives:

- 1) All fire management activities will have as the highest priority firefighter and public safety.
- 2) Appropriate management responses for all wildland fires (regardless of ignition source) will be rapid containment and suppression to protect the public, stop fire spread onto private property and protect the natural and cultural resources of the Park.
- 3) Emphasis will be placed on facilitating reciprocal fire management activities through the development and maintenance of cooperative agreements and working relationships with pertinent fire management entities.
- 4) Hazard fuel reduction will be given high priority in and around developed areas, along the interface boundary, and adjacent to cultural and historic sites.
- 5) Apply mechanical hazard fuel reduction around infrastructure to reduce fire intensity and severity to lesser levels. This can be used as the first step in a fuels reduction program followed by prescribed fire.
- 6) Apply mechanical hazard fuel reduction around vulnerable cultural resources for protection from fire damage.
- 7) Prescribed fires will be accomplished during periods of time or under a prescription that minimizes escape possibilities. If fuel loading is high enough to make control of the burn difficult then consider a two-stage process, such as mechanical treatment then prescribed burning.
- 8) Prescribed fire and mechanical treatment will be used to reduce hazard fuel build-ups facilitating protection of values at risk.
- 9) Strong interagency fire and emergency service agency participation will be encouraged. Interaction with adjacent landowners through White Sands National Monument participation in prevention programs and mutual hazard fuels reduction projects will be encouraged.

Full Suppression FMU Constraints:

- 1) Smoke management reporting procedures for burning in New Mexico will be followed for all prescribed fire operations.
- 2) Employ minimum impact suppression tactics.
- 3) No off road vehicle use unless approved by the Superintendent.
- 4) No dozer or grader use unless approved by the Superintendent.
- 5) Protection mitigation measures for known historic and cultural resource sites in or near the project area must be assured before a prescribed burn project is initiated.
- 6) Chainsaw use must be approved by the Superintendent
- 7) Low-level aircraft use and retardant must be approved by the Superintendent and coordinated with HAFB and WSMR.
- 8) All fire management activities will consider safety of personnel and the public as the highest priority.
- 9) Park neighbors, park visitors and the local residents will be notified of all planned and unplanned fire management activities that have the potential to impact them.
- 10) All park closures are at the discretion of the Superintendent.
- 11) No fire management operations will be initiated until all personnel involved receive a safety briefing describing known hazards and mitigating actions (LCES), current fire season conditions and current and predicted fire weather and behavior.
- 12.) Qualified individuals that promote the safe and skillful application of fire management strategies and techniques will carry out fire management operations.
- 13) All prescribed fire and other fuels management activities will be conducted in compliance with procedures outlined in RM-18, Wildland Fire Reference Manual, Chapter 10, Fuels Management.

APPENDIX I: PREPAREDNESS ACTIONS

Preparedness Actions

a) Prevention/Wildland Fire Use Educational Activities

The month of June is historically a high fire danger period. During this month, the visiting public will be reminded of the 36 CFR regulations regarding the use of fireworks in the park, and the policy regarding contained fires. Patrols will be alert to fireworks use and unconfined fires.

b) Annual Training

Annual training will consist of annual fire fighter safety refresher training, first aid and other safety training for appropriate individuals. As a staffing need for White Sands National Monument an Incident Commander Type IV should be on site, this should be a training priority for White Sands National Monument.

c) Annual Preparedness Activities

January:

- Perform fire physical exams as per standards in RM-18, Fire Management Guidelines.

March:

- Inventory fire equipment, order needed supplies and update equipment list. Includes both fire cache and personal equipment.
- Complete all prescribed fire plans for upcoming season and have signed by Superintendent.
- Prepare prescribed fire briefing messages for public notification.
- Pack test fire personnel annually, as per standards in RM-18 and
- Update and submit fire qualifications to area FMO office.
- Obtain or prepare signs for prescribed fire interpretation.

April:

- Review Step-Up Plan.
- Inspect fire cache and ensure that equipment is ready.
- Check the established Regional procedure for utilizing suppression and emergency preparedness accounts.

1st Week of July

- Post warnings regarding fireworks regulations
- Increase patrols during 4th of July weekend

November

- Critique fire season including all fire management activities (i.e. wildland fire suppression, mechanical fuel treatment, and prevention, etc.)
- Evaluate individual performance of park staff to correct deficiencies and recommend personnel for training.
- Review and revise Fire Management Plan, if necessary.

d) Step-up Plan

The Superintendent or Site FMO has the ability to step up one preparedness staffing class for unusual park events that would increase the potential for wildland fire.

Preparedness activities during the fire season are based on the National Fire Danger Rating System (NFDRS). Fire days are broadly divided into five staffing classes according to the intensity of danger factors as indicated by the Burning Index (BI).

The BI integrates the effects of weather, fuels, and topography to estimate potential fire behavior and the corresponding amount of effort required to contain a fire. The staffing classes relate to the expected severity of fire conditions.

Preparedness actions are based on the predicted fire weather before 1400 hours and on actual fire weather after 1400 hours for all staffing classes.

The Burning Indices established below are based on fourteen years of data collection at the Dripping Springs fire weather station #292903 from 1984-1998. Those data indicate a value for the 90th percentile equaling a BI of 62. The value for the 97th percentile is 72. The analysis was based on using Fuel Model L, a Slope Class of 1 (0-25 percent), perennial herbs, and a Climate Class of 1 (Semi-arid).

Table 1.—Burning Index and Staffing Class (From RM-18)

Burning Index and Staffing Class	
0-20	I
21-39	II
40-61	III
62-71	IV
72+	V

Fire conditions that typify each staffing class and the corresponding preparedness actions required are as follows:

Staffing Classes I, II, and III

Conditions: Periods of green up of herbaceous fuels or wet/humid conditions when fuels will not readily sustain fire

Preparedness Actions

- Hand tools and portable equipment in a state of readiness.

Suppression Actions

- One qualified employee will depart within five minutes for the fire location.
- Additional initial attack resources will be dispatched after size-up and upon request of the first firefighter to arrive.
- If necessary, cooperator assistance will be requested as described under the dispatch section.

Staffing Class III (BI 40-61)

Conditions: Fires will present a moderate level of control difficulty. Light fuels are becoming dry. Heavy fuels and brush are drying.

Preparedness Actions

- All actions specified for Staffing Class I and II days will be conducted.

Suppression Actions

All suppression actions indicated for Staffing Classes I and II will be taken.

Staffing Classes IV and V (BI 62+)

Conditions: Fire will present a moderate to high level of control difficulty. Initial attack and reinforcing crews may have difficulty controlling a fire at this level. All fuels are dry. Air temperature is high and humidity is low. Strong gusty winds are possible. Spotting may occur.

Preparedness Actions

- Ensure that a minimum of two qualified fire personnel is available for initial attack.
- All actions specified for Staffing Class III days will be conducted.
- Detection road patrols will be increased.
- Close communication and coordination of suppression forces will take place with cooperators.
- Visitor Center personnel will alert the public to fire hazards.
- Interpretive activities will include a fire safety message.
- Emergency preparedness funds (PWE P11) may be used to bring staff to required levels. However, regularly scheduled personnel will be used to the extent possible. It is recognized that both nonessential routine activities and project work may be postponed on Class IV and V days.
- Fire danger notices will be posted.

Suppression Actions

All actions specified for Staffing Class III days will be taken.