

National Park Service
U.S. Department of the Interior



Saguaro National Park
Arizona

Fire Management Plan/ Environmental Impact Statement

Record of Decision

Approved:



for

Michael D. Snyder
Intermountain Regional Director
National Park Service

Date:

4-25-07

**UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE**

RECORD OF DECISION

**FIRE MANAGEMENT PLAN
ENVIRONMENTAL IMPACT STATEMENT**

Saguaro National Park

Arizona

The Department of the Interior, National Park Service (NPS) has prepared this Record of Decision (ROD) on the Final Environmental Impact Statement (FEIS) for Saguaro National Park's Fire Management Plan (FMP). This ROD includes a description of the background of the project, a statement of the decision made, synopses of other alternatives considered, the basis for the decision, findings on impairment of park resources and values, a description of the environmentally preferable alternative, a listing of measures to minimize environmental harm, and an overview of public and agency involvement in the decision-making process.

BACKGROUND OF THE PROJECT

This FMP revision was initiated in 2002 due to changes in NPS and Federal fire management policy. Revision of the plan will reflect the needed refinements to the program as indicated by ongoing research and monitoring in the park.

Saguaro National Park's fire management program started in the mid-1970s, when NPS fire management policy was changed to allow natural processes to occur when possible. The NPS moved from suppressing all fires to letting certain fires burn if it contributed to the accomplishment of resource management objectives without threatening developed or populated areas or cultural sites. Refinements have been made to the park's fire management program and will continue to be made as knowledge of fire ecology and fire behavior is gained. The last revision of the FMP was in 1991.

Fire management is an integral part of the park's natural and cultural resources management program. The FMP will assist in achieving land management objectives as defined in 1997 amendment to the Natural and Cultural Resources Management Plan, and the 1988 General Management Plan. Many of the vegetation communities in the park evolved under the influences of periodic fires, and many plants have developed adaptations to and/or dependence on a regime of frequently-occurring fires. Unfortunately, decades of fire suppression have altered park vegetation structure and composition as well as wildlife habitat characteristics. The restoration of fire to its

natural role in park ecosystems is one of the highest natural resource management priorities for Saguaro National Park.

The FEIS presents an analysis of alternatives for implementing the fire management program at Saguaro National Park. The purpose of the FMP is to provide a comprehensive direction for fire management and a foundation for decision-making for the park for the next 10 years. The plan describes goals, objectives, and operational guidelines for the management of all aspects of fire for the park. The clarification of what must be achieved according to law and policy is based on review of the park's purpose, significance, and special mandates. The goals of this FMP are to:

- Give primary consideration to firefighter, employee, and public safety.
- Manage fire to minimize threats of unacceptable effects of fire to property outside the park and sensitive cultural and natural resources.
- Restore and maintain fire-adapted ecosystems through the ecologically appropriate use of fire.
- Utilize research and monitoring to improve our understanding of the role of fire in the park's vegetative communities.
- Integrate fire management with all other aspects of park management.
- Educate employees and the public about the scope and effect of wildland and prescribed fire management, including fuels management, resource protection, prevention, hazard/risk assessment, mitigation and rehabilitation, and fire's role in ecosystem management.
- Maintain cooperative planning with other land agencies and landowners.
- Protect sensitive cultural resources.

The No Action Alternative represents the status quo for Saguaro National Park's fire management. The two action alternatives presented in the FEIS are based on a thorough consideration of the best-available information on fire and its effects upon park resources, park visitors, and other values at risk.

DECISION

Description of the Selected Action

The park has selected "Alternative E -Implement a fire management plan that utilizes wildland fire use for resource benefit, prescribed fire, non-fire treatments, and suppression to accomplish resource objectives in FMU 1, and total suppression in FMU 2" for implementation.

As described in the FEIS, features of the Selected Action include the following:

- FMU 1 encompasses the area of the park above 4,500 feet in the Rincon Mountain District, and contains five of the six vegetation types outlined for fire management, including desert grassland, pine-oak woodland, pine-oak forest, ponderosa pine forest, and mixed-conifer forest. In this FMU, naturally ignited

fires will be allowed to burn (i.e., wildland fire use for resource benefit) and prescribed fires will be initiated in specific areas under conditions that meet resource objectives. Since the elevational limits of Sonoran desertscrub are variable, fires will be allowed to burn in the upper ranges of desertscrub (4,500 – 5,200 feet) as long as saguaros are not present and the fire is not burning in desert grassland. The goal of prescribed fire is to restore fire in an ecologically appropriate manner to fire-prone ecosystems in FMU 1, and to enhance the opportunity for, and management of, wildland fires that benefit and protect the unit’s resources. Suppression will continue in developed areas, near park boundaries with jurisdictions having different fire management objectives, in areas where human life would be placed at risk, for fires not meeting resource objectives, and for fires that run any risk of becoming unnaturally large, high-intensity fires.

- FMU 2 encompasses the entire Tucson Mountain District as well as everything below 4,500 feet in the Rincon Mountain District. This unit will be classified suppression only, with the exceptions being if park managers deem a fire unsafe to suppress, or if new scientific data suggests that fire should be a part of this ecosystem. In the latter scenario, an amendment to the plan will need to be completed before fire is allowed in this FMU.

Like the No Action Alternative, this alternative will allow for interagency cooperation by permitting naturally ignited fires that are meeting resource objectives to cross the boundaries of public lands whose management agencies have similar objectives.

Key Actions

Public and Firefighter Safety

Public and firefighter safety is the number one priority of all alternatives. The Federal Fire Policy states: “Firefighter and public safety is the first priority, and all fire management plans and activities must reflect this commitment.” NPS Wildland Fire Policy (Director’s Order 18) echoes this direction: “The National Park Service is committed to protecting park resources and natural ecological processes, but firefighter and public safety must be the first priority in all fire management activities.” The FMP will enact the following directions to ensure the safety of firefighters and the public:

- The safety training requirements listed in Chapter 3 of *National Park Service Reference Manual 18 (RM-18)* (National Park Service 1999b) will be adopted and adhered to.
- Qualification standards for Incident Command System positions as listed in National Wildfire Coordinating Group 310-1 “Wildland Fire Qualification Subsystem Guide” will be adopted.
- The use of SAFE NET ground-based safety incident reporting system will be adopted and implementation procedures will be included in the employee handbook.
- After Action Reviews will be conducted by the project leader or incident commander after each shift of a project or incident to evaluate safety and effectiveness of work performed and identify and discuss encountered hazards.

Public Information and Education

There will be an active partnership among Fire Management, Interpretation, and Resources Management staff to promote fire education among park staff and visitors. Fire education will be a component of interpretive staff training. Throughout the year, interpreters will incorporate wildland fire management and the role of fire in ecosystems into interpretive walks and evening programs when possible.

During fire season, as staffing allows, interpreters will staff significant prescribed fires or managed wildland fires near visitor use areas, to provide educational services. Where fires are particularly visible from major scenic overlooks or traditional high-use visitor areas, a roving Fire Information Officer, qualified personnel, or trained park interpreters will give talks about fire and smoke.

The Fire Management and Interpretation staff will notify adjacent communities by press release before prescribed fires are implemented. Interpretation and fire personnel will work closely with visiting Fire Information Officers, who may be part of an Incident Management Team or Fire Use Management Team, to assure that information is delivered effectively. Prompt reply to all media and public queries will be an essential element of public information. Information about wildland fire and smoke will be readily available, as would information about the fire management plan and ecosystem restoration if appropriate.

During emergency wildland fire situations, park interpretive staff could be brought in from other areas to assist in providing information to visitors and to assist the incident information officer.

Mitigating Measures

Saguaro National Park has a variety of special places and sensitive cultural and natural resources. To ensure that natural and cultural resources and the quality of the visitor experience are protected, a consistent set of mitigation measures will be applied to the actions proposed in this plan.

Successful implementation of the mitigation measures will be facilitated by ensuring that fire management is integrated with all other aspects of park management. Toward this end, fire activities in the park will be directed by the Fire Management Committee under direction of the Superintendent and the Fire Management Officer (FMO). In addition, the Fire Management Committee will insure that collaborative planning among park staff is provided during any prescribed and wildland fire projects, and will conduct pre- and post-fire season briefing with park staff.

Management responses to all wildland fires will be determined through the use of the Wildland Fire Implementation Plan (WFIP) Stage I Initial Fire Assessment within 2-hours of the ignition, evaluating public and firefighter safety, fire behavior, values at risk, potential suppression damage, and the availability of fire management resources. Decision criteria and risk factors requiring in-depth analysis for Saguaro often include:

off-site impact of air quality, seasonal fire danger/drought and its relation to fire spread (including chances of fire spreading off-park into jurisdictions lacking fire use capability), availability of resources, on-site impacts to cultural and natural resources, and threats to human life.

Identifying and mapping sensitive cultural and natural resources within the park boundaries which could be negatively affected by fire will help to minimize threats to these resources. If known sensitive natural or cultural resource sites are within any proposed prescribed fire or managed wildland fire area, the area will be evaluated and suitable site-specific mitigation measures will be developed and implemented as necessary. If an incident is projected to last longer than one operational period, a Resource Advisor may be assigned for the duration of the incident.

Around sensitive resources and in sensitive resource areas, fire management will utilize minimum impact tactics. Tactics used at Saguaro will include, but are not limited to:

- Use of water or fugitive retardant.
- Firelines should be kept to the minimum width necessary to stop the fire's spread. Whenever possible, natural barriers should be utilized to avoid unnecessary fireline construction.
- Cold trailing of the fire-edge rather than digging handlines is preferred whenever possible.
- Wetline should be used in lieu of handline construction if water and pumps are available.
- All firelines, spike camps, or other disturbances inside the park should be rehabilitated to maintain a natural appearance.
- Tree felling should be minimized, especially in visually sensitive areas. Later, during rehabilitation, the "slant cut" technique, which faces the cut away from view, or flush cutting stumps, is preferred.
- Trees, limbs, brush, and other debris should be scattered and not left in piles. This debris will be used in rehabilitation efforts by placing it over previous constructed firelines.
- Maximize use of long line sling operations to reduce damage to vegetation for construction of helispots.
- Protective tactics should be used in areas identified by the Resource Management Specialist as having cultural significance, either archeological or historical.
- Protective tactics should be used in areas identified as being sensitive for natural resources.
- The Incident Commander is charged with incorporating minimum impact suppression tactics (MIST) into the suppression efforts in all operational plans.
- Heavy equipment, such as dozers, will not be used without approval by the Regional Director.
- No vehicles should be driven off-pavement without the Superintendent's approval.

Additional mitigation measures are discussed in the following resource-specific sections.

Protection of Special-Status Species

- During the planning phase of any fire management activity, the presence or absence of special-status species in the area will be determined. Park subject matter experts will evaluate existing databases and maps, and, if necessary, request additional surveys or field verification.
- Prescribed fires are planned, and normal protocols require that resource specialists be involved in the plan review process. On-the-ground inventories of prescribed fire units (smaller units within an FMU) will take place if they have not already been completed. If inventories are required, burning will be delayed until the inventory and suitable mitigation is completed.
- If a prescribed fire unit has the potential to provide habitat for special-status species, steps will be taken to avoid nesting season and other sensitive periods of time for animals and plants. Altering the time of burning, providing direct protection of certain areas such as nesting trees, or simply not allowing fire into parts of the unit will do this. In addition, thinning may be used during preparation of prescribed burn unit areas where fuel conditions could create unsafe or undesirable conditions during the burning phase of the operation.
- With wildland fires, which are unplanned events, the resource advisors will be notified of the intent to manage a fire in a certain part of the park. The location of the ignition will be reported and efforts will be made to get specialists into the area to perform basic inventory work as part of the cost of the incident. If specialists locate features that will require some mitigation, *action points* (geographic locations at which mitigation actions are triggered if reached by the fire) will be established and mitigation plans will be developed. If the fire reaches an action point, the mitigation plan will be implemented. It could take several days to weeks before this happens, or the fire may never reach the identified resource at risk.
- Potential impacts to threatened and endangered species are fully analyzed in a Biological Assessment of the proposed action, which is included in the FEIS as Appendix 7. The resulting Biological Opinion from the U.S. Fish and Wildlife Service will be included with the Record of Decision regarding the FEIS. The requirements found in these two documents will be directly incorporated into each site-specific fire implementation plan, thereby serving as the primary mitigation measures for protecting threatened and endangered species. If a fire management project could cause an adverse impact on any federally listed species beyond what was considered in the existing Biological Assessment, additional consultation with the U.S. Fish and Wildlife Service is required.
- Wildland fire use for resource benefit actions will be constrained if they pose undesirable disturbance to important habitat for special-status wildlife, or if they threaten significant populations of special-status flora.

Non-Native Species

- Recognizing that fire management activities cause disturbance, there is potential that fire management activities could result in opportunities for non-native plant species to invade disturbed areas. For example, in some areas the effects of

wildland fire use for resource benefit have contributed to the invasion of non-native thistle. Sites will be surveyed before and after prescribed fire and non-fire treatments and after wildland fires to determine the presence or absence of non-native plant species. If non-native plants are discovered on a project site, the park Fire Ecologist and Restoration Ecologist will develop appropriate mitigation measures. As the Resource Management Division identifies practices in the prescribed fire program that require modification, changes will be made.

- Fire may also be an effective tool for managing some non-native species. If the park's Resource Management Division prepares a non-native species control plan that recommends the use of fire, the Fire Management Office will prepare a prescribed fire plan. This plan will include fire prescriptions, site preparation plans, and monitoring needed to help carry out the non-native species control plan.

Snags and Slash

- Generally, snags (standing dead trees) and other standing vegetation are not cut during fire management activities unless they present a threat to human life or safety or are a hazard to property or a valued resource. They may also be felled to control a wildland fire. In the event that a snag or live vegetation must be cut down, the stump will be cut flush with the ground (or as close to the ground as possible).
- Debris from cut vegetation (slash) will be either lopped and scattered to a depth of no more than 18 inches and burned during a subsequent prescribed fire, or piled and burned outside of fire season.

Wilderness

- In wilderness, fire management activities are conducted in accordance with the Wilderness Act (using the Minimum Requirement Decision Analysis) and minimum impact suppression tactics (MIST) are used. Nevertheless, impacts from site preparation for prescribed fires or non-fire treatments are visible to visitors within the immediate area, and this evidence of human activities diminishes the wilderness character of the area. However, other than resultant stumps cut flush with the ground and other visible saw cuts, most activities will be conducted so that effects would be adverse, short term, and minor. Slash and debris will be scattered to reduce visual effects in wilderness.

Soils and Water Quality and Quantity

- During any fire management activity, impacts to soils will be minimized by utilizing the best available techniques to minimize soil disturbance and to rehabilitate disturbed soils. Best practices used will include minimizing construction of fireline, locating fireline to minimize erosion, rehabilitating fireline, and restoring slope contour. Areas with a high probability of erosion will be stabilized using best available methods, as determined by the park fire and resource management staff. The least intrusive action, such as natural recovery of native plant species, will be preferred, except in rare circumstances. Soil quality objectives will be incorporated into prescribed burn prescriptions in sensitive

areas where negative fire/soil effects are known to have occurred or to have the potential to occur.

- Water quality and quantity will be protected largely by employing erosion control methods, which will prevent excessive siltation of tinajas and other wet areas. Water quality will also be protected by keeping any application of fire retardant away from water to the greatest extent possible. Pilots and engine crews will be directed to avoid dropping retardants within 300 feet of springs, streams, and seeps.

Air Quality

- Smoke resulting from wildland fires and all prescribed burning and debris disposal will comply with all federal, state, and local regulations, including those contained in the Arizona State Department of Environmental Quality Smoke Management Plan. A site-specific prescribed burn plan will be prepared for each project, and will include all of the required elements listed in RM-18.
- One important aspect of smoke mitigation is to limit the number of acres and the amount of fuel burned. When adjacent land management agencies and land owners are managing prescribed fires or wildland fires, cooperation and coordination are initiated to minimize cumulative smoke impacts, including by limiting the number of burns occurring simultaneously.
- Smoke movement patterns have a direct relationship to watersheds, especially below 7,500 feet. If several fires were burning simultaneously in the same air-quality watershed, down-valley smoke might be extreme. Because of this, the park will potentially control additional starts within an air-quality watershed that already has a fire burning within it.
- Another important element of smoke mitigation is timing prescribed burns to minimize smoke impacts on air quality and visibility. This includes utilizing favorable conditions of atmospheric stability, mixing height, and transport winds. Specifying an acceptable range of moisture content and wind conditions for each prescribed burn, and promptly mopping-up prescribed burns also aid in limiting negative smoke impacts.
- Additionally, park staff will monitor air quality adjacent to project areas and within developed areas of the park. Unhealthy or hazardous accumulations of smoke will trigger an aggressive suppression action that includes mop-up and that will persist until the air quality is no longer unhealthy or hazardous.

Cultural Resources

Pre-Incident Planning

- Planning for fire management actions will include protection of known cultural resources.
- Known cultural resources will be assessed for hazardous fuels, which will be reduced as part of ongoing fuel reduction programs.
- The park will continue to consult with park-associated Native American tribes about fire management planning and specific fire management actions in order to identify issues and resources of concern and to implement the most appropriate treatments.

- In traditional use areas, fire managers will consider the needs of cultural practitioners to access and use traditional resources.
- In fire management units lacking cultural resource inventory data, consultation, background research, or inventory will be conducted to identify resources that may be important and are susceptible to adverse impacts from fire or fire management actions.
- Cultural resources typical of those found at Saguaro will be included in long-term research and experimentation about the effects of fire on cultural resources.

Incident Response

- Fire management teams will solicit the advice of archaeologists, cultural resource specialists or resource management staff on cultural resource issues and concerns.
- To avoid damage to cultural resources, archaeologists, cultural resource specialists, or resource management staff will, whenever possible, aid in positioning crew camps, holding lines, spike camps, helispots, drop zones, and other fire suppression related facilities in culturally sensitive areas that were not located during pre-planning activities.
- Archaeologists, cultural resource specialists, or resource management staff will advise fire management teams of known significant cultural resources in areas where potential impacts of fire could be reduced or avoided through emergency fuel reduction.
- Wherever possible, archaeologists, cultural resource specialists, or resource management staff will document significant cultural resources prior to a burn.

Visual Impacts

- Aesthetic impacts will be judged on a case-by-case basis; the park Superintendent will approve any mitigation measures.

Safety and Human Impacts

- Impacts to visitors, employees, and park residents will be minimized by planning fire management activities during daylight hours and on workdays whenever possible. Before starting any project, the public and employees will be notified of proposed activities through road signs, trail signs, and postings at visitor centers, entrance stations, post offices, or other areas of frequent use.

Communication/Coordination

- Communication, cooperation, and collaboration with neighboring agencies and communities, park partners, visitors, residents, and employees will be an essential component of all plans for fire management activities. Communication with adjacent agencies and landowners will be conducted when projects occur at or near their boundaries or there is an identified impact that might or would affect park neighbors. Identifying and mapping county, state, federal, and private lands within one mile of the park's designated boundary will help to minimize threats of unacceptable effects of fire to property outside the park.

Monitoring

Fire Monitoring

Monitoring of fires, both wildland and prescribed, involves the systematic collection and recording of data on fuels, topography, weather, air quality, and fire behavior. Monitoring at Saguaro National Park would generally follow the protocols outlined in the *National Park Service Fire Monitoring Handbook*. A fire-monitoring plan is a required element in NPS fire management plans. The *Saguaro Wildland and Prescribed Fire Monitoring Plan* (Appendix 3) provides detailed descriptions and additional protocols for wildland and prescribed fires. The fuels and ecology group within the park's branch of fire and aviation will complete this monitoring; assistance would be provided by other park staff as needed.

Short- and long-term vegetation monitoring objectives applicable to a specific burn area will be stated in the prescribed fire plan. At a minimum, monitoring will comply with the protocol identified in the *National Park Service Fire Monitoring Handbook*. Data collected from short-term monitoring will be attached to the fire report along with any narrative completed by the prescribed fire monitors.

Cultural Resources Monitoring

NPS recognizes that the effects of fire and the thresholds for unacceptable damage to some types of cultural resources (e.g., archaeological resources) are not well understood. An ongoing effort to obtain baseline information and develop this understanding would make it possible to refine sound risk management for fire planning. Monitoring the effects of fire in field situations would be an important component of this work. However, until systematic laboratory experiments can be conducted, field-based fire effects monitoring will be limited to empirical observations. For resources such as cultural landscapes, systematic fire effects research and monitoring will focus on indicators or criteria for landscape restoration and maintenance.

Outlined below is the minimum level of effort for monitoring the effects of fire on cultural resources. This monitoring will provide feedback on the effectiveness of current resource protection measures, such as site avoidance and pre-burn fuel load reduction. It will be designed to document pre- and post-burn resource conditions that are readily observable, such as preservation of flammable historic fabric, preservation of milling slicks on archaeological sites, visually identifiable changes in surface artifacts and surface conditions, and changes in landscape conditions in historic districts and cultural landscapes.

As systematic processes for evaluating fire effects evolve, monitoring will be revised to support field evaluation. In the interim, cultural resource specialists (usually archaeologists from the National Park Service's Western Archaeological Conservation Center) will identify any necessary pre-burn mitigation for prescribed fires, resource protection measures, and the most appropriate monitoring strategy for planned and unplanned burns. In general, these will consist of the following:

Pre-burn

Known cultural resources will be relocated and current conditions would be assessed using standard operating procedures (Appendix 2). This will include documentation of current fuel loads, likely duration and intensity of a fire, threats to features and artifacts, and potential for subsurface impacts through burning roots and stumps. These data will be assessed to determine: (1) which protection measures should be implemented (if any); (2) the potential for fire effects studies; and (3) additional monitoring needs.

During Burn

For all fires, a Resource Advisor or Technical Specialist will provide recommendations to park managers. Although this will be primarily for resource protection, it will also provide documentation of fire behavior and immediately observable effects of fire in and adjacent to cultural resources. If suppression or holding actions were to be taken, the Resource Advisor will monitor as needed to advise on site-specific actions.

Post-burn

An archaeologist will revisit known cultural resources in burn areas to document any changes in condition and assess post-burn protection needs. Fire effects on cultural resources will be documented and subsequently added to the park's database on the effects of fire and fire management activities on cultural resources. Burn prescriptions and techniques used to protect cultural resources will also be refined.

Research

The need for better data on fire effects is a nationwide issue. All efforts to conduct fire effects research at Saguaro National Park will be coordinated with the Intermountain Region, other National Park Service Units, and other federal, state, and local agencies.

Fire Research Program

Saguaro National Park's current fire management program is based on more than 30 years of scientific studies and research. As the program continues to mature, additional information will be needed to refine objectives and meet new challenges. New research needs and priorities will be identified by the Fire Management Office in conjunction with the park's Resource Management Division. Information gaps in several areas have already been identified. For example, NPS needs to continue to improve its understanding of the park's fire history. Data on the fire return interval, season of burning, and fire severity are needed for vegetation types other than mixed-conifer and ponderosa pine forests. Research that leads to an understanding of the structural component of lower elevation vegetation types is needed to provide a basis for target conditions. These structural features include gap distributions, species composition, and density. In addition, a fuel model map for the park needs to be developed and the park's vegetation map needs to be updated and verified. Finally, additional information on the effects of fire on invasive species, air quality, water quality, and sensitive species habitats would improve the park's fire management program.

Cultural Resource Research

In order to determine the most effective techniques for cultural resource protection and preservation, park researchers must first find out more precisely how heat affects

archaeological objects; how fire was used by indigenous people in managing specific plant resources and the pre-contact and prehistoric landscapes; and how fire can be used to restore and maintain historic and traditional cultural landscapes. These data could then be used to develop protocols to avoid or mitigate the potentially damaging effects of burning.

OTHER ALTERNATIVES CONSIDERED

Alternative C- No Action Alternative: Under the No Action Alternative, the existing direction and level of accomplishment of Saguaro National Park’s fire management program as described in the 1991 fire management plan would continue. The current plan utilizes a range of fire management strategies that include prescribed fire, wildland fire use for resource benefit, fire suppression, and hand cutting followed by prescribed fire. It allows for interagency cooperation by allowing naturally ignited fires that are meeting resource objectives to cross the boundaries of public lands whose management agencies have similar objectives.

FMU 1 is found above 7,000 feet and encompasses approximately 7,000 acres in the Rincon Mountain District. The unit contains coniferous forest and lies within the designated wilderness area created by Public Law 94-567 of October 20, 1975. This unit is classified as an “appropriate suppression response” unit, in which park policy is to allow wildland fire use for resource benefit and prescribed fire while suppressing fires outside the prescription parameters. All human-caused fires are suppressed.

FMU 2 contains vegetation described as oak and Woodland occupying an area of approximately 34,000 acres in the Rincon Mountain District. This unit is also classified as an appropriate suppression response unit, with park policy allowing wildland fire use for resource benefit and prescribed fire.

FMU 3 encompasses 12,000 acres in the Rincon Mountain District, all designated wilderness. This unit contains vegetation described as Sonoran desertscrub and desert grassland, and is also classified as an appropriate suppression response unit. Park policy in this unit is to allow wildland fire use for resource benefit, but prescribed fire is applied only for restoration of historic plant communities, such as grassland.

In FMUs 1, 2, and 3, lightning-caused fires—except those that threaten human life and property, facilities, cultural resources, threatened and endangered species, or other important resources—are permitted to burn. Other considerations for the prescription include:

- Fire growth predictions
- Energy release component and burning index
- Red flag watch or warning associated with current or forecasted weather
- Air quality restrictions resulting from ventilation conditions or Arizona Department of Environmental Quality smoke curtailment requests

- Proper preparedness level, staffing, and resources in place
- Drought evaluation
- Existing/predicted weather

The 1991 FMP dictates that the causes of all fires be determined to make proper management decisions. Under this plan, all wildland fires for resource benefit are monitored daily or more frequently in accordance with the *Western Region Fire Monitoring Handbook* (1991) and the Wildland Fire Situation Analysis created for that fire. The park continuously updates information on fire size, location, behavior, smoke dispersal, safety conditions, and effects.

FMU 4 contains 10,000 acres of desert grassland and Arizona Upland vegetation located in the Rincon Mountain District. Approximately half of this unit is designated wilderness. It is classified as a suppression unit—i.e., all fires are suppressed.

FMU 5 contains 8,000 acres of Arizona Upland vegetation located in the Tucson Mountain District, with wilderness accounting for 7,200 acres. It is classified as an appropriate suppression response unit, with park policy allowing wildland fire use for resource benefit with no prescribed burning.

FMU 6 contains 13,000 acres of desert grassland and Arizona Upland vegetation located in the Tucson Mountain District. Approximately 6,000 acres of this unit is designated wilderness. It is classified as a suppression unit.

Since the inception of Saguaro’s fire management program, natural fire regimes have begun to be restored at the park and fuel buildup has been reduced in some areas, although not at the rate needed for comprehensive ecosystem maintenance and restoration.

Alternative D-Implement a fire management plan that utilizes prescribed fire and non-fire treatments (with no wildland fire use for resource benefit) in FMU 1, and total suppression in FMU 2: Alternative D would change how the park manages fire by focusing on prescribed fire and non-fire treatments only, and by reducing the number of fire management units from six to two. It would not allow naturally ignited fires to burn.

Proposed FMU 1 encompasses the area of the park above 4,500 feet in the Rincon Mountain District, and contains five of the six vegetation types outlined for fire management, including desert grassland, Woodland, pine-oak forest, ponderosa pine forest, and mixed-conifer forest. In this FMU, prescribed fires would be initiated in specific areas under conditions that meet resource objectives. The goal of prescribed fire would be to restore fire in an ecologically appropriate manner to fire-prone ecosystems. Non-fire treatments (hand removal of trees for thinning purposes) would also be allowed in this unit. The goal of non-fire treatments in FMU 1 would be to reduce the risk of catastrophic fire, protect sensitive natural and cultural resources, and provide for improved fire lines for prescribed burns. Suppression would be triggered in all cases of non-management ignited fires.

Proposed FMU 2 encompasses the entire Tucson Mountain District as well as everything below 4,500 feet in the Rincon Mountain District. This unit would be classified suppression only and no management ignited fires, with the exceptions being if park managers deem a fire unsafe to suppress, or if new scientific data suggests that fire should be a part of these ecosystems. In the latter scenario, an amendment to the plan would need to be completed before fire is allowed in this FMU.

Alternative D would allow fire management operations to incorporate the National Park Service's new policy direction and terminology as well as new information about threatened and endangered species management and natural and cultural resources. It would also include development of a site-specific fire implementation plan that would incorporate all of this data into a working action plan, which the current plan lacks.

BASIS FOR DECISION

After careful consideration of all of the alternatives presented, their environmental impacts, planning goals, and public comments received throughout the planning process, Alternative E has been selected for implementation. This alternative best accomplishes NPS and Federal fire management policy, the legislated purpose of Saguaro National Park, and the statutory mission of the NPS to provide long-term protection of the park's resources. The selected action also best accomplishes the stated purpose of the Saguaro National Park fire program and the criteria derived from these purposes.

FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS has determined that implementation of Alternative E from the FEIS will not constitute impairment to the park's resources and values nor will it violate the NPS Organic Act. This conclusion is based on a thorough analysis of the environmental impacts described in the FEIS, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in management policy. While the plan does contain some negative impacts, in all cases these adverse impacts are short-term, minor, and able to be mitigated through appropriate action. Overall, the plan results in major benefits to park resources and values, and it does not result in their impairment.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or identified as a goal in the

park's general management plan or other relevant National Park Service planning documents." (NPS Management Policies, Part 1.4.5)

The non-impairment policy does not prohibit impacts to park resources and values. The NPS has the discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impacts do not constitute impairment. Moreover, an impact is less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values.

The actions comprising Alternative E will achieve the goals of the FMP in a comprehensive, integrated manner that reduces fire-related risks while also allowing fire to assume its role in the park's ecosystems. Actions implemented under Alternative E that will cause negligible to minor, short-term adverse impacts will not constitute impairment; these impacts have limited severity and/or duration and will not result in appreciable irreversible results on the resources. Beneficial effects identified in the FEIS include effects related to restoring and protecting park resources and values.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The CEQ provides direction that "the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's §101: (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradations, risk to health or safety, or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety, of individual choice; (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources."

Alternative C's lack of a site-specific fire implementation plan would increase the chance for adverse effects from wildland fire use for resource benefit as well as from suppression activities. Thus, the No Action Alternative would result in less impact than Alternative D but more than Alternative E to the biological and physical environment; it is moderately effective (between Alternatives D and E) in terms of protecting, preserving, and enhancing historic, cultural, and natural resources. The current fire management plan does, however, do a good job of balancing natural and cultural resource management needs with safety concerns.

Alternative D would have the greatest potential for adverse effects on the biological and physical environment in the long term, along with the most protection in the short term. This is because immediate suppression of all wildland fires would promote the continuation of hazardous fuel accumulation, which could lead to catastrophic fire. Such fire would negatively impact natural and cultural resources and would not ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Alternative E would best balance natural and cultural resource management needs with safety concerns. The Alternative's timeframe for environmental restoration and hazard reduction, combined with its selective application of both aggressive and passive treatments, and its utilization of a site-specific fire implementation plan, would create a balance that would minimize damage to the biological and physical environment and that would best protect, preserve, and enhance historic, cultural and natural resources. It would also ensure safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

After careful review of potential resource and visitor impacts of the three alternatives under consideration, and developing proposed mitigation for impacts to natural and cultural resources, it was determined that the environmentally preferred alternative is Alternative E. Although the other alternatives may achieve greater levels of individual protection for cultural resources or natural resources in the short-term, or may better enhance visitor experience in the short-term, Alternative E best realizes the long-term benefits and the full range of national environmental policy goals as stated in Section 101 of the National Environmental Policy Act.

PUBLIC AND INTERAGENCY INVOLVEMENT

Public Meetings, Scoping, and Outreach

In late 2002, the fire management office at Saguaro National Park sent a newsletter to individuals, organizations, media, and agency and government offices on the park's planning activity mailing list. This newsletter invited recipients to assist in identifying fire management issues and opportunities, and advised them of open houses in October, 2002, to learn about and discuss possible issues and alternatives. Two open houses were held, one at the Rincon Mountain District visitors center and the other at the Tucson Mountain District visitors center. Six people attended the two open houses and two comment letters were received during the scoping period.

As a result of the national direction and the issues raised during the public and internal scoping in 2002, a Notice of Intent to prepare an EIS was prepared and published in the Federal Register on September 23, 2002. The Notice of Intent invited the public to help identify fire management issues and concerns, a suitable range of alternatives and appropriate mitigating measures, and the nature and extent of potential environmental impacts to be addressed in the EIS. During this public scoping period, no letters, faxes, or e-mails were received.

Public Comment

Public comment on the Draft Environmental Impact Statement (DEIS) began on February 10, 2004 and closed on April 9, 2004. The DEIS was mailed to 44 interested federal, state, local and Indian tribal agencies and members of the public, and to five public and university libraries. It was also posted on the park website.

A total of two written comments were received; one from the US Environmental Protection Agency, and one from an individual.

Comments included concerns the type of font used, explication of mitigation measures for specific resources/species within the park and the size of FMU 1. Comments were integrated into the FEIS.

Consultation and Coordination

On December 19, 2001, and January 24, 2002, interdisciplinary meetings were held with members from the NPS, United States Geological Survey, and United States Forest Service. The meetings identified the need for a new fire management plan; created an interdisciplinary team to help create and review the plan and the EIS; established goals for fire management; developed a cultural resource matrix describing resources and possible effects from fire; identified resource/issue topics to be examined in the EIS; and identified an array of reasonable alternatives to be considered. NPS professionals participating on the team were from several different disciplines (Science and Resource Management, Fire Management, Visitor and Resource Protection, Interpretation, Maintenance, Administration).

On October 9th and 16th, 2002, Saguaro National Park held open houses so the public could participate in the creation of alternatives, discuss possible impacts or areas of concern, and provide input on appropriate courses of action.

On December 11th, 2002 and January 13th, 2003, participants from the interdisciplinary team as well as representatives from the U.S. Forest Service and U.S. Fish and Wildlife Service held an impact analysis meeting to determine possible impacts on the resources/issue topics created in January 2002.

Agency and American Indian Consultation and Coordination

In keeping with its mandates for tribal consultation, NPS consulted with many American Indian tribes throughout the planning process. Nine tribes/communities/pueblos were identified as having potential traditional associations with park lands and resources: Ak-Chin Indian Community, Ft. McDowell Mojave-Apache Indian Community, Gila River Indian Community, Hopi Tribe, Pascua Yaqui Tribe, Salt River Pima-Maricopa Indian Community, San Carlos Apache Tribe, Tohono O'odham Nation, and Zuni Nation. The tribes were provided copies of the EIS for comment on June 9, 2006 and no replies were received.

Section 7 & 106 Compliance

A number of meetings were held with staff from the National Park Service and U.S. Fish and Wildlife Service. These meetings were held to discuss impacts that the alternatives might have on various resource values as well as on agency planning efforts. The Endangered Species Act of 1973 requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. After initial consultation, the USFWS recommended that a Biological Assessment (BA) be prepared. A BA was submitted to the USFWS on June 24, 2005, and a Biological Opinion (BO) was received on October 23, 2005.

The National Historic Preservation Act of 1966 requires Federal agencies to take into account the effects of their undertakings on historic properties. Impacts of the preferred alternative on cultural resources would be “not adverse,” long term, and negligible to minor. The Arizona State Historic Preservation Office was consulted on June 9, 2006 and a reply received on July 14, 2006, asking about cultural landscape issues. NPS responded to those concerns in a letter on July 21, 2006, requesting a written reply within 30 days. No written response was received and on September 7, 2006 NPS contacted the SHPO via telephone. SHPO staff stated that the consultation was recorded in the SHPO database, with the final entry after receipt of the July 21 letter “no response required”, thereby concluding the consultation.

CONCLUSION

All practical means to avoid or minimize environmental harm from the selected alternative have been adopted. Because there would be no major adverse impacts to resources whose conservation is (1) necessary to fulfill specific purposes in the establishing legislation or proclamation for Saguaro National Park; (2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or (3) identified as a goal in relevant National Park Service planning documents, there would be no impairment of the park’s resources or values. After a review of these effects, the alternative selected for implementation will not impair park resources or values and will not violate the NPS Organic Act.