

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

RECORD OF DECISION

**FINAL POINT REYES NATIONAL SEASHORE FIRE MANAGEMENT PLAN/
ENVIRONMENTAL IMPACT STATEMENT**

**Point Reyes National Seashore
Marin County, California**

The Department of Interior, National Park Service (NPS) has prepared this Record of Decision on the *Final Fire Management Plan/EIS* for Point Reyes National Seashore (PRNS) and North District of Golden Gate National Recreation Area (GGNRA). The North District of GGNRA is administered by Point Reyes National Seashore. This Record of Decision includes a description of the background for 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 revision of the Fire Management Plan (FMP) was initiated in 2000 because of changes to NPS and federal fire management policy and to bring about needed refinements to the program, as indicated by research and monitoring that has been ongoing since the earliest days of fire program implementation.

Fire management planning and programs have been ongoing since 1970, when NPS fire management policy was changed to allow natural processes to occur when possible. Refinements have been made to the PRNS fire management program, and will continue to be made as knowledge of fire ecology and fire behavior increases. The previous revision to the FMP was completed in 1993. 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 that are defined in the 1993 Resources Management Plan.

The planning area for the FMP includes NPS lands located approximately 40 miles northwest of San Francisco in Marin County, California. These lands include the 70,046-acre Point Reyes National Seashore, comprised primarily of beaches, coastal headlands, extensive freshwater and estuarine wetlands, marine terraces, and forests, as well as 18,000 acres of the Northern District of GGNRA, primarily supporting annual grasslands, coastal scrub, and Douglas-fir and coast redwood forests.

The purpose of the FMP is to provide a framework for all fire management activities for the Seashore and the North District of GGNRA, including suppression of unplanned ignitions, prescribed fire, and mechanical fuels treatments. It is intended to guide the fire management

program for approximately the next 10-15 years. The plan would include concise program objectives, details on staffing and equipment, and comprehensive information, guidelines, and protocols relating to the management of unplanned wildfire, prescribed burning, and mechanical fuels treatment.

Fire management is an essential component of NPS operations in PRNS and the Northern District lands of GGNRA. The need for a well-planned and effective fire management program is threefold. First, the project area's ecosystems have evolved through time with the periodic occurrence of fires, both natural and human-ignited, and many components of these systems require the continuation of periodic fire. As is typical of many national parks and other federal lands, however, active and effective fire suppression efforts for the past 150 years have dramatically changed native ecosystems. Ecosystem changes from the lack of fire include forest and shrub encroachment on grasslands, decadence and death of fire-adapted species, and extremely dense forests.

Second, fire suppression has also resulted in a dangerous accumulation of flammable or hazardous fuels - large quantities of dead and downed trees and branches that have accumulated in overly dense forests and shrublands. Because of these high fuel loads, residences and businesses adjacent to the PRNS and GGNRA are at risk from catastrophic wildfire or a smaller fire spreading from adjacent parklands. Also, a structural fire close to the park could spread into federal lands and develop into a wildland fire that damages park resources.

Third, the park's existing Fire Management Plan (NPS, 1993) needs to be updated. Since the current FMP was published in 1993, the national fire policies have been updated and new guidelines have been issued to park units. In addition, the NPS has conducted fire research and now has a better understanding of the role of fire in ecosystem preservation, resulting in a greater capability of the PRNS to conduct an effective fire program. Updating also allows PRNS to focus more heavily on effectively reducing fire risk along the wildland/urban interface, reducing hazardous fuels, and reestablishing fire in park ecosystems where it is safe to do so.

The following goals have been developed for the updated Fire Management Plan for PRNS and the Northern District lands of GGNRA. These goals were generated from internal staff meetings and public external scoping meetings and presentations, and from review of NPS Policies, Director's Orders, and other fire-related guidance documents listed below.

- Goal 1: Protect firefighters and the public.
- Goal 2: Protect private and public property.
- Goal 3: Maintain or improve conditions of natural resources and protect these resources from adverse impacts of wildland fire and fire management practices.
- Goal 4: Maximize efforts to protect cultural resources from adverse effects of wildland fire and fire management practices.

- Goal 5: Foster and maintain effective community and interagency fire management partnerships.
- Goal 6: Foster a high degree of understanding of fire and fuels management among park employees, neighbors, and visitors.
- Goal 7: Improve knowledge and understanding of fire through research and monitoring and continue to refine fire management practices.

The Final Environmental Impact Statement identifies and evaluates three alternatives for a FMP for Point Reyes National Seashore administered lands. Potential impacts and appropriate mitigation are assessed for each alternative. The Fire Management Plan and Final Environmental Impact Statement (FMP/FEIS) documents the analyses of two action alternatives, and a “no action” alternative.

DECISION (SELECTED ACTION)

Alternative C is the selected action in the final FMP/FEIS and remains unchanged from the draft EIS. Under Alternative C, Increased Natural Resource Enhancement and Expanded Hazardous Fuel Reduction, fire management actions will be used to markedly increase efforts to enhance natural resources and reduce hazardous fuels. This alternative includes objectives for increasing the abundance and distribution of federally listed species, reducing infestations of invasive, non-native plants and increasing native plant cover. Prescribed burning and mechanical treatments will be used to protect or enhance cultural resources, such as reducing vegetation in areas identified as important historic viewsheds.

Alternative C permits the highest number of acres treated annually for hazardous fuels reduction concentrating on high priority areas (e.g., along road corridors, around structures, and in strategic areas to create fuel breaks). Up to 3,500 acres could be treated per year using prescribed fire and mechanical treatments. Under this alternative, research efforts will be expanded to determine the effects of fire on natural resources of concern (e.g., rare and non-native species) and to determine the effectiveness of various treatments for fuel reduction. Research results will be used adaptively to guide the fire management program in maximizing benefits to natural resources, while protecting lives and property.

This alternative will reduce the threat of a catastrophic wildland fire to a more stable fire condition at Year 13 of implementation rather than Year 23 as in Alternative B or indefinite extension of the program under Alternative A, the No Action Alternative. Ten of eleven Fire Management Units (FMUs) will be treated under Alternative C; the eleventh FMU – the Minimum Management FMU – is primarily leased for agriculture and is subject to defensible space and roadside clearing under all three alternatives. As documented in the final EIS, Alternative C was also deemed to be the “Environmentally Preferred” Alternative. This alternative also provides the greatest protection to designated wilderness by ensuring long-term ecological health.

To ensure that implementation of fire management plan actions described in Alternative C conform to findings of this impact assessment, subsequent five-year plans and individual projects when appropriate will be subject to NPS project review. Prior to approval, projects will be submitted through an NPS internal review process wherein an interdisciplinary team

will evaluate if the potential effects of the proposed projects are adequately addressed through the FMP NEPA process. Conformance to the conclusions in the FMP EIS will be documented for the NEPA record. If the team finds that the project has major new environmental effects not addressed in this EIS or effects greater than those described in this EIS, a separate environmental process will be conducted. In addition, as part of the project review process, projects carried out in designated wilderness will be required to go through a minimum requirement process. In this two step process, the park must: 1. make a determination as to whether or not a propose management action is appropriate or necessary for the administration of the park as wilderness; and 2. if the project or activity is appropriate in wilderness, make a selection of the management method/tool that causes the least impact on the physical resource and experiential qualities of wilderness.

OTHER ALTERNATIVES CONSIDERED

The final FMP/FEIS analyzes two other alternatives. Alternative A, Continued Fuel Reduction for Public Safety and Limited Resource Enhancement, is the No Action Alternative representing the current fire management program. The current program uses a limited range of fire management strategies - including prescribed fire, mechanical treatment, and suppression of all wildland fires, including natural ignitions. Alternative A would continue the existing program described in the 1993 Fire Management Plan including mechanical treatments of hazardous fuels of up to 500 acres per year, primarily mowing in grasslands. Up to 500 acres per year would be treated by prescribed burning, primarily for fuel reduction in grasslands and for Scotch and French broom control. Total treatments per year will not exceed 1,000 acres. Research projects already in progress on reducing Scotch broom and velvet grass through prescribed burning would continue under this alternative. In continuing current practices, treatments would occur in four of eleven FMUs sited along the primary roadways. This program does not place emphasis on wildland/urban interface communities.

Alternative B - Expanded Hazardous Fuel Reduction and Additional Natural Resource Enhancement. Alternative B calls for a substantial increase over present levels in the reduction of hazardous fuels through prescribed burning and mechanical treatments (up to a combined total of 2,000 acres treated per year). Efforts would be concentrated where unplanned ignitions will be most likely to occur (e.g., road corridors), and where defensible space could most effectively contain unplanned ignitions and protect lives and property (e.g., around structures and strategically along the park interface zone). Natural resource enhancement would occur as a secondary benefit only. For example, prescribed burning to reduce fuels may have the secondary resource benefit of controlling a flammable, invasive non-native plant. Fire management actions would occur in nine of eleven FMUs with no projects occurring at the low grasslands within the Headlands FMU or in the Minimum Management FMU. Assuming full annual implementation, a stable fire condition with a lowered potential for a catastrophic fire such as the 1995 Vision Fire, could be achieved by Year 23 of plan implementation.

BASIS FOR DECISION

After careful consideration of the alternatives presented, their environmental impacts, planning goals, and public comments received throughout the planning process, including comments on the *Draft Fire Management Plan/Environmental Impact Statement*, Alternative C has been selected for implementation. This alternative best accomplishes National Park Service and Federal fire management policy, the legislated purpose of PRNS and GGNRA, and the statutory mission of the National Park Service to provide long-term protection of park resources. The selected action also best accomplishes the stated purposes of the Fire Management Plan (as described on page 1-5, in the Purpose and Need Chapter, of the *Final Fire Management Plan/EIS*, and the criteria derived from these purposes. An analysis of the selected alternative’s relationship to these goals is presented below.

RANGE OF FMP ALTERNATIVES COMPARED BY FIRE MANAGEMENT GOALS

Goals	Alt. A	Alt. B	Alt. C
Protect firefighters and the public	2	2	3
Protect private and public property	1	2	3
Maintain or improve conditions of natural resources and protect these resources from adverse impacts of wildland fire and fire management practices	2	2	3
Maximize efforts to protect cultural resources from adverse effects of wildland fire and fire management practices	2	3	3
Foster and maintain effective community and interagency fire management partnerships	3	3	3
Foster a high degree of understanding of fire and fuels management among park employees, neighbors, and visitors	2	3	3
Improve knowledge and understanding of fire through research and monitoring and continue to refine fire management practices	2	2	3

- 1 - Partially Meets Goal
- 2 –Meets Basic Level of Goal
- 3 –Provides Highest Levels of Goal Achievement

ENVIROMENTALLY PREFERRED ALTERNATIVE

National Park Service policy regarding implementation of the National Environmental Policy Act (NEPA) requires that an environmentally preferred alternative be identified in all NEPA analysis documents. Determination of this alternative takes place after the environmental analysis is complete. The environmentally preferred alternative is the alternative that best

promotes the national environmental policy expressed in Section 101 of NEPA. This includes alternatives that would:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all visitors a safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- 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;
- achieve a balance of population and resource use which would permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Essentially, this means the environmentally preferred alternative is the one that causes the least damage to the biological and physical environment or most naturally perpetuates biological or physical process; it also means the alternative which is best suited to protect, preserve, and enhance historic, cultural and natural resources and process. After analyzing the alternatives described in this FEIS, the NPS has determined that Alternative C is environmentally preferred. Alternative C includes fire management treatments that would provide a high level of protection of human health, life and property, while maximizing efforts toward restoring and maintaining ecological integrity, and protecting and enhancing cultural resources (e.g., preserving important historic, cultural and natural aspects of our national heritage). Although Alternative B also would provide a high level of protection of life and property, it would not provide the same benefits to natural and cultural resources. Of the three alternatives, Alternative A (No Action) would provide the lowest degree of protection of lives and property, and minimal benefits to natural and cultural resources.

FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS has determined that implementation of Alternative C from the *Fire Management Plan/Environmental Impact Statement* will not constitute an impairment to park resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the *Final Fire Management Plan/EIS*, 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 has some negative impacts, in all cases these adverse impacts are the result of actions to preserve and restore park resources and values. 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, 2001)

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.

This decision is made based on guidance contained in the NPS Management Policies (2001). The decision to implement Alternative C will result in a greater level of accomplishment of the goals of the fire management program, with the potential for reversing the departure from natural fire return intervals. If annual accomplishment rates and funding can be maintained, Alternative C would achieve ecosystem restoration and wildland/urban interface protection, and would do so with lesser on-site impacts than under Alternative B. The potential for high-intensity catastrophic fire that would put high-value at risk would be greatly reduced under the selected alternative.

The combination of the use of mechanical thinning techniques and prescribed fire in the inner wildland urban interface, and the use of prescribed fire in the outer wildland urban interface will provide a defense in depth against unwanted wildland fires. The restoration of wildland fire where this can be safely done will also reduce the extent of unnaturally dense accumulations of wildland fuels which pose a risk to natural and cultural resources, as well as to public safety and communities.

In conclusion, the NPS has determined that the implementation of Alternative C will not result in impairment of resources and values in PRNS and GGNRA North District. This conclusion is documented in the *Final Fire Management Plan/EIS*.

MEASURES TO MINIMIZE ENVIRONMENTAL HARM

The NPS has investigated all practical means to avoid or minimize environmental impacts that could result from implementation of the selected action. The measures have been incorporated into Alternative C, and are presented in detail in the *Final Fire Management Plan/EIS*.

A consistent set of mitigation measures would be applied to actions that result from this plan (see Appendix A). Fire monitoring by the Fire Management Staff and Resource Management programs will be implemented to detect deleterious results. These results from this program will guide and assure compliance monitoring, biological and cultural resource protection,

noxious weed control, visitor safety and fire education, endangered, threatened and special status species protection, and other mitigation.

Mitigation measures will also be applied to future actions that are guided by this plan. In addition, the National Park Service will prepare appropriate compliance reviews, i.e., National Environmental Policy Act, National Historic Preservation, and other relevant legislation for future actions not covered under this EIS, including projects in wilderness involving mechanical treatments or prescribed fire.

PUBLIC AND INTERAGENCY INVOLVEMENT

During a series of scoping meetings, the NPS requested input from the public, from federal, state, and local agencies, and from park resource specialists on fire management concerns, the types of issues that should be addressed in the EIS, and the range of fire management alternative strategies that should be considered.

On January 27, 2000, a “Notice of Scoping for Fire Management Plan at Point Reyes National Seashore” was published in the Federal Register. On January 29, 2000, at a public meeting of the Point Reyes National Seashore Citizen Advisory Commission, a presentation was given announcing the scoping period for the plan. Scoping comments were solicited from January 27, 2000 to March 28, 2000.

On February 14, 2000 and on February 22, 2000, internal scoping sessions were conducted to identify staff issues and concerns. These meetings were attended by an interdisciplinary group of resource and fire specialists from the PRNS and GGNRA staff.

In addition to the Federal Register Notice, the scoping period was publicized through a mass mailing to the public that included background information on the FMP and a notice of a scoping workshop held March 9, 2000. Notices posted in the communities surrounding the park and a notice in the local weekly newspaper, the Point Reyes Light, also advertised the workshop. The two-hour March 9, 2000 public scoping workshop was attended by five citizens.

On March 28, 2000, a two-hour scoping session was held for local fire agencies. In addition to representatives of the NPS Fire Management Office, members of the Marin County Fire Department, Inverness Volunteer Fire Department, California State Parks, and Marin Municipal Water District were in attendance. Also invited, but not attending, were the Marin County Open Space District, Bolinas Fire Protection District, Nicasio Volunteer Fire Department, and Stinson Beach Fire Department.

In spring of 2001, the NPS conducted a two-hour meeting to provide an overview to the Marin County Fire Department of the preliminary alternatives, and consulted on possible changes and/or modifications.

The draft EIS for the Fire Management Plan was released for public comment on February 20, 2004 when EPA filing notice occurred. The Notice of Availability (NOA) was published on February 25, 2004. The draft EIS was placed on the park website during the comment period and notices of its availability were sent to over 200 interested parties including agencies and organizations. Fifteen copies of the draft EIS were sent to the State of California Clearinghouse for state agencies on February 24, 2004 for review. Copies were also distributed to all local libraries, the central Marin County Library and the San Francisco Public Library. Approximately 12 copies of the draft EIS were sent to interested parties. A public meeting was held at Point Reyes National Seashore on March 18, 2004; approximately 15 people attended. The comment period closed April 20, 2004. Seven written comment letters were received; they are addressed below.

The Federated Indians of Graton Rancheria have been consulted for compliance with the Native American Graves Protection and Repatriation Act. A letter was sent to the tribe on February 19, 2004. Consultation will continue for each specific project when appropriate.

The Environmental Protection Agency reviewed the draft FMP/EIS and rated it LO—Lack of Objections and supported the NPS selection of Alternative C with a few minor corrections that were made in the FEIS.

Documentation of NPS compliance with federal and state laws and regulations is incorporated into the text of the FEIS. Compliance with the major federal laws and associated state regulations is summarized here.

Endangered Species Act of 1973, as amended, PL 93-205, 87 Stat. 884, 16 USC §1531 et seq. The Act protects threatened and endangered species, as listed by the U.S. Fish and Wildlife Service (USFWS), from unauthorized take, and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. Section 7 of the Act defines federal agency responsibilities for consultation with the USFWS and the National Marine Fisheries Service (NMFS) and requires preparation of a Biological Assessment to identify any threatened or endangered species that is likely to be affected by the proposed action. The National Park Service initiated consultation on February 9, 2001 and continued with the USFWS and the NMFS.

The NMFS Biological Assessment, dated May 17, 2004, concurred with the NPS finding of not likely to adversely affect threatened steelhead and threatened coho salmon. The NMFS BA has been incorporated in the *Final Fire Management Plan/EIS*.

The USFWS Biological Opinion, dated May 28, 2004, has been incorporated into the *Final Fire Management Plan/EIS*. The USFWS concurred that the actions in Alternative C will not likely to adversely affect the following federally listed species: western snowy plover, northern spotted owl, Sonoma alopecurus, Sonoma spineflower, Tiburon paintbrush, beach layia, Tidestrom's lupine, Marin dwarf, and California freshwater shrimp. Regarding the federally-listed Myrtle silverspot butterfly and the California red-legged frog, the USFWS did

not concur with the not likely to adversely affect determination, but concluded that the proposed project will result in significant long-term benefits to these two listed species and the proposed critical habitat, and any adverse effects will be minor and temporary in nature. The PRNS has agreed to additional mitigation measures proposed by USFWS and they have been incorporated in the *Final Fire Management Plan/EIS*.

Archeological Resources Protection Act of 1979, PL 96-95, 93 Stat. 712, 16 USC §470aa et seq. and 43 CFR 7, subparts A and B, 36 CFR. This Act secures the protection of archeological resources on public or Indian lands and fosters increased cooperation and exchange of information between private, government, and the professional community in order to facilitate the enforcement and education of present and future generations. It regulates excavation and collection on public and Indian lands. It requires notification of Indian tribes who may consider a site of religious or cultural importance prior to issuing a permit. The NPS will meet its obligations under this Act in all activities conducted in the Fire Management Plan.

National Historic Preservation Act of 1966, as amended, PL 89-665, 80 Stat. 915, 16 USC §470 et seq. and 36 CFR 18, 60, 61, 63, 68, 79, 800. The National Historic Preservation Act requires agencies to take into account the effects of their actions on properties listed in or eligible for listing in the National Register of Historic Places. The Advisory Council on Historic Preservation has developed implementing regulations (36 CFR 800), which allow agencies to develop agreements for consideration of these historic properties. The NPS, in consultation with the Advisory Council, the California State Historic Preservation Officer (SHPO), American Indian tribes, and the public has developed a Programmatic Agreement for operations and maintenance activities on historic structures. This Programmatic Agreement provides a process for compliance with National Historic Preservation Act, and includes stipulations for identification, evaluation, treatment, and mitigation of adverse effects for actions affecting historic properties. The NPS sent a scoping notice and the Draft Fire Management Plan/EIS to the State Historic Preservation Officer and the Advisory Council for Historic Preservation. No response or comments were received from these offices.

American Indian Religious Freedom Act, PL 95-341, 92 Stat. 469, 42 USC §1996. This act declares policy to protect and preserve the inherent and constitutional right of the American Indian, Eskimo, Aleut, and Native Hawaiian people to believe, express, and exercise their traditional religions. It provides that religious concerns should be accommodated or addressed under NEPA or other appropriate statutes. The National Park Service, as a matter of policy, will be as nonrestrictive in permitting Native American access to and use of an identified traditional sacred resource for traditional ceremonies.

Comments Received Following Release of the Final EIS

The Notice of Availability for the Final EIS was published in the Federal Register on August 31, 2004; EPA's Notice of Filing was posted on September 10, 2004 formally initiated the

No Action Period which concluded on October 12, 2004. The Final EIS was placed on the park website during the no-action period and notices of its availability were sent to over 200 interested parties including agencies and organizations. Copies of the Final EIS were requested by, and distributed to, the San Francisco Main Public Library, State of California Department of Fish and Game, and Bay Area Air Quality Management District. Two individual letters of comment were received regarding the *Final Fire Management Plan/EIS*. These letters expressed general concern about prescribed burning, but did not have specific comments that could be addressed.

CHANGES MADE FOR THE *FINAL FIRE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT*

A number of minor changes were made in the *Final Fire Management Plan/EIS*, based on public comment period for the draft EIS. During the review of the draft EIS, only seven written comments were received. Four letters were from agencies including Environmental Protection Agency, Bay Area Air Quality Management District (BAAQMD), State of California Clearinghouse and Planning Unit, and National Marine Fisheries Service. Two were from organizations expressing support for the preferred alternative. One expressed concern about various issues related to fire such as visual and smoke impacts on air quality. Based on these letters, minor changes were made in the *Final Fire Management Plan/EIS* as described on pages 420-449. No major changes were made to Alternative C, the selected course of action. Minor text changes were made in response to BAAQMD letter to ensure PRNS was in compliance with regulations and protocol. At the request of EPA, PRNS included the Biological Opinion from USFWS and NOAA Fisheries concurrence that the FMP will not likely have an adversely affect threatened fish species or adversely modify critical fish habitat.

CONCLUSION

Alternative C provides the most comprehensive and effective method among the alternatives considered for meeting the National Park Service's purposes, goals, and criteria for managing fire and fire risks in Point Reyes National Seashore and the North District of GGNRA and for meeting national environmental and fire policy goals. The selection of Alternative C, as reflected by the *Final Fire Management Plan/EIS*, would not result in the impairment of park resources and would allow the National Park Service to conserve park resources and provide for their enjoyment by visitors. Alternative C would also protect the overall long-term ecological health of the park's wilderness area.

Approved:

Signature on file 10/29/2004

Jonathan B. Jarvis, Regional Director
Pacific West Region, National Park Service

Date

APPENDIX A

Mitigation Measures for the PRNS/GGNRA North Fire Management Plan

To ensure that the action alternatives protect natural and cultural resources and the quality of the visitor experience, a consistent set of mitigation measures would be applied to actions of the Fire Management Plan. The National Park Service will complete appropriate environmental review (i.e., as required by National Environmental Protection Agency, the National Historic Preservation Act, the Endangered Species Act and other relevant legislation) for future actions not covered in the *Final Fire Management Plan/EIS*. As part of the environmental review, the NPS would avoid, minimize, and mitigate adverse impacts to the greatest extent possible. In addition as part of the project review process, projects carried out in designated wilderness will be required to go through a minimum requirement process. In this two step process, the park must: 1. make a determination as to whether or not a propose management action is appropriate or necessary for the administration of the park as wilderness; and 2. if the project or activity is appropriate or ness in wilderness, make a selection of the management method/tool that causes the least impact on the physical resource and experiential qualities of wilderness.

General

G-1. To ensure that implementation of fire management plan actions conforms to findings of this impact assessment, subsequent five year plans and individual projects will be subject to NPS project review. Prior to approval, all projects will be submitted through an NPS internal review process wherein an interdisciplinary team will evaluate if the potential effects of the proposed projects are adequately addressed through the FMP NEPA process. Conformance to the conclusions in the FMP EIS will be documented for the NEPA record. If the team finds that the project has major new environmental effects not addressed in this EIS or effects greater than those described in this EIS, a separate environmental process will be conducted.

Soils

General

S-1. Individual burn plans will be written with sufficient detail to determine the extent of impacts to soil from erosion. Subject matter experts will determine if the erosion control plan submitted is sufficient to prevent long-term moderate or major impacts on the rate of soil erosion. In other words, the expert will determine if the proposed erosion control strategy will be sufficient to ensure no greater than minor impacts to soils from erosion. If the assessment finds that standard erosion control strategies will be insufficient to avoid long-term moderate or major effects on the rate of erosion, a separate NEPA process will be initiated for that burn plan. Strategies used to minimize impacts to soils can include avoiding steep slopes, timing burns to minimize erosion potential, or using erosion control devices during or after burns.

S-2. Watershed level planning will be used to assure that erosion rates within any one watershed will conform to the conclusions of environmental effect reached in this FEIS, (e.g.,

impacts will be no more than moderate in intensity). Watershed level planning will be triggered when proposed actions have potential to exceed 10% of the total area of one or more FMP watersheds in one year. This mitigation measure assures that planning considers the watershed scale, and if a potential effect is identified, that a specific assessment be conducted for the burn plan to assure the conformance of watershed level effects with this FEIS.

For Prescribed Burns

S-3. Some coarse, woody debris, if available, will be left on the site for nutrient cycling and mycorrhizal function.

S-4. All constructed fire lines will be rehabilitated to prevent compaction if needed.

For Mechanical Treatments

S-5. Mechanical regrading of roads will be conducted to specifications identified in the PRNS Trails Inventory and Condition Assessment and Road Memorandum of Understanding with adjacent land management agencies. Use of these specifications will minimize erosion from fire roads.

S- 6. For FMP tree removal actions in areas with highly erosive soils or slopes over 15%, tree stumps will be left in place and cut as close to ground surface as feasible.

For Wildland Fire Control Activities

S-7. Following wildland fires, soil rehabilitation efforts will be focused on rehabilitating ground disturbance from heavy equipment.

S-8. Unless no feasible alternative is available, heavy equipment will not be used in areas where soils are wet or extensive compaction could occur. If staging of equipment or supplies occurs on soils, a clearly marked and visible limit of disturbance line will be installed using either stakes, flagging, or fencing. Surface soils in areas subjected to compaction will be scarified at the end of the period of use to retard runoff and promote revegetation.

S-9. Erosion control measures will be implemented where project actions could leave soils exposed to runoff prior to revegetation. Erosion control measures include covering exposed soils with weed-free chipped material, native duff, erosion control blankets, or certified sterile rice straw.

S-10. Where surface soils must be disturbed and soils support native vegetation, existing vegetation and topsoil will be retained and reinstalled whenever feasible.

Air Quality

A-1. If recommended by Bay Area Air Quality Management District, prescribed burn plans submitted for review could be modified to reduce production of pollutants. Options include

modifying burns to reduce the area burned, reducing fuel loading (e.g., mowing and understory thinning), or managing fuel consumption. Treatments to reduce overall air emissions from prescribed burns can include:

- Mowing grass and reducing density of vegetation in brushlands.
- Mechanical treatment of forested areas by removing standing or downed trees, understory thinning, thinning of forests, and creation of shaded firebreaks.
- More frequent, less intense burns to prevent unwanted vegetation from becoming established in clearings or in forest understory.

A-2. Increasing combustion efficiency or shifting the majority of combustion away from the smoldering phase and into the more efficient flaming phase will reduce emissions (except NO_x, which is produced in greater quantities at higher temperatures). Methods to accomplish this will include pile or windrow burning, rapid mop-up, and shortened fire duration. Pile or windrow burning will generate more heat and burn more efficiently and be most effective in reducing forest fuel rather than brush type fuels.

A-3. The park will develop a Smoke Communication Strategy to guide management of smoke events during prescribed fires, managed wildland fires, suppression actions, and fires occurring outside the park. Notification of proposed burns will be disseminated through local media and postings to provide adequate advance notice to persons with sensitivities to smoke when burning is planned. Information will be provided to visitors, employees, and residents in smoke affected areas regarding health issues and concerns. The park will monitor particulate levels in the park during large smoke events to provide data for future assessments.

A-4. PM_{2.5} monitoring data will be collected at Bear Valley in the Point Reyes National Seashore. Data collected will be shared with local, regional, and national air quality agencies and databases.

A-5. To reduce smoke and pollutant generation during late summer and early fall, efforts will be made to burn fuel concentrations, piles, landings, and jackpots outside of the prescribed burning season to increase the number of units that can be burned without overloading the airshed on days with good dispersal conditions.

A-6. To avoid impacts to visibility in the Class I PRNS portion of the project areas, burning will be avoided on holidays or other periods when recreational visitation is typically high.

A-7. To avoid public health and nuisance impacts to neighboring communities, prescribed burns will be conducted under meteorological conditions that will avoid smoke drift into sensitive residential areas and that will transport smoke away from populated areas. Planning for prescribed burning also will consider the smoldering period to avoid fires where downslope winds during the night could carry smoke into residential areas at the base of ridges.

Water Quality and Water Resources

W-1. Individual burn plans will be written with enough detail to determine the extent of erosion within the burn area due to a) the prescribed burn and/or, b) mechanical treatments. Subject matter experts will determine if the erosion control plan submitted is sufficient to prevent long-term moderate or major impacts to the water resources and water quality, and will assure project compliance with TDML implementation plans for Tomales Bay, Lagunitas Creek, and Walker Creek, according to availability through adoption by the EPA. Strategies to minimize erosion and sediment transport to water resources associated with prescribed burning include avoiding oversteep slopes, timing burns to minimize erosion potential, or using erosion control devices after burns. Strategies to minimize erosion and sediment transport to water resources associated with mechanical treatment include avoiding oversteep slopes, avoiding scraping or clearing to bare mineral soil (leave duff layer), or installing erosion control devices as part of mechanical treatment (if necessary).

W-2. Watershed level planning will be used to assure that prescribed burning and/or mechanical treatment within any one watershed will conform to the conclusions of the environmental effect reached in this EIS (e.g., the impacts will be no more than moderate in intensity). Watershed level planning will be triggered when proposed actions have the potential to exceed 10% of the total area of one or more FMU watersheds in one year. This mitigation measure assures that planning considers the watershed scale and, if a potential effect is identified that a specific assessment be conducted for the burn plan to assure the conformance of the watershed level effects within this EIS.

W-3. Helispots, staging areas, and spike camps will be located at least 100 feet away from streams, creeks, and other water bodies.

W-4. All fireline (both handline and dozer line) will be rehabilitated as quickly as possible, which will include application of Burned Area Emergency Rehabilitation (BAER) techniques such as recontouring, soil stabilization as needed, and monitoring for erosion and treatment as necessary in the first winter following disturbance.

W-5. When developing prescribed burn boundaries, non-treatment buffer areas will be established around perennial, intermittent, and ephemeral channels associated with Lagunitas Creek, Olema Creek, Pine Gulch Creek, and other coastal drainages originating from Inverness Ridge. Some treatment within buffer areas, including hand removal of non-native species and “cool” burns of non-native grasses, may occur within these areas. Fire lines around these areas will be mowed - not graded or scraped - in order to leave a 100-foot vegetated buffer strip from burn areas.

W-6. Foams or other fire retardants will not be used in or near wetlands.

Vegetation

The following mitigation measures will be applied to reduce impacts from prescribed fire and mechanical treatment within all vegetation types:

V-1. “Pre”-Treatment Measures

- Individual prescribed burns will be conducted within the framework of a multidisciplinary planning effort. Personnel from fire management and from resource management will work together to identify areas that are expected to benefit from prescribed burning. Existing data on the response of plant communities in the Seashore to fire will be consolidated and analyzed to determine optimal areas, configurations, and times for burns. Clear objectives will be developed for prescribed burns that will include measurable parameters to determine the effects of the burns on vegetation. Following burns, vegetation will be analyzed to determine the effects of the burn, which will aid in future burn planning.
- Prescribed burns will be conducted at a time of year when introduction or spread of non-native plants will be minimized, and mortality of non-native plant species will be maximized.
- Whenever possible, existing roads or trails will be used as firebreaks for prescribed burns and for wildland fire suppression.
- Vegetation managers will work with fire management staff to develop maps of areas that support plant communities of special management concern (e.g., uncommon communities, wetlands, riparian areas, dunes, areas with no non-native plants that need to be kept intact, areas with highly invasive non-native plants that should not be spread) so fire personnel can attempt to avoid such areas when making decisions about fire management tactics.

V-2. “During” Treatment Measures

- Soil disturbance will be minimized to the greatest extent possible to reduce potential for introduction or spread of invasive non-native plant species.
- The aerial extent of disturbance associated with mechanical treatments will be kept to the minimum necessary to reduce fire risk.
- For helispots or spike camps, previously disturbed sites and open areas will be used whenever possible to minimize additional disturbance.
- Burn piles will be kept small to minimize the area disturbed and to allow for the recolonization of sterilized patches by mycorrhizal fungi and other soil organisms in adjacent areas.

V-3. “Post”-Treatment Measures

- Areas subject to fire management treatments will be monitored periodically for the presence of invasive non-native plant species, and if such species have established or spread as a result of such activities, the non-natives will be removed.

- All fireline (both handline and dozer line) will be rehabilitated as quickly as possible, which will include application of BAER techniques such as re-contouring, soil stabilization as needed, and monitoring for and removal of invasive non-native plant species for a minimum of three years following a fire.

V-4. In grasslands

- Follow-up non-native plant monitoring and removal will be conducted to remove new recruits that come into the site in years following prescribed burning or mechanical treatments.
- All grassland burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being met.
- To enhance grassland plant species composition, and reduce the chance of invasion or spread of non-native species, native seeding trials will be conducted following fire management treatments in some areas.
- In Alternative C, small pilot burns (less than 100 acres) will be conducted in the Tomales Point FMU grassland to determine plant community response. These burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being met. If pilot projects determine objectives can be met using prescribed fire, individual burn size will increase to a maximum of 150 acres.

V-5. In Bishop pine

- Follow-up non-native plant monitoring and removal will be conducted to remove new recruits that come into the site in years following prescribed burning or mechanical treatments.
- Prescribed burning in Bishop pine stands will occur only if the burns can be conducted under conditions that will result in germination and recruitment of new stands of Bishop pine. Relatively cool fires under moist conditions may not meet this objective.
- Initially, prescribed burns in Bishop pine forest habitat will be small and will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of Bishop pine and associated native species without introduction of invasive non-native plant species) are being met.

V-6. In Douglas-fir/coast redwood forests

- If pre-burn thinning of trees is required in forested stands, the trees to be thinned will be no larger than 10" in diameter.

- Prior to conducting prescribed burning in Douglas-fir or coast redwood forests, Seashore fire and vegetation managers, and wildlife and plant ecologists will collaborate to fully develop rationale, objectives, prescriptions, and plans for conducting burns in the redwood forests within the project area.

V-7. In hardwood forests

- Site-specific objectives will be developed for prescribed burns in hardwood forest habitat. The intent of such burns may be to reduce density or abundance of this vegetation type to encourage coastal scrub development, or may be to enhance the ecological health of the hardwood plant communities. Unique, site-specific burn prescriptions and timing will be required to meet these differing objectives.

V-8. In coastal scrub

- In coastal scrub small pilot burns (> 50 acres) will be conducted. These burns will be carefully monitored to ensure burn objectives (= recruitment and long-term maintenance of native species without introduction of invasive non-native plant species) are being met. If pilot projects determine objectives can be met using prescribed fire, individual burn size will increase to a maximum of 200 acres.

Wetlands

W-1. Burns will be allowed to back into and burn around wetlands and meadows or through them if the vegetation is dry enough to carry fire. Wetlands will be avoided to the greatest extent possible during fire confinement and containment.

W-2. Fire suppression activities will not occur in wetlands unless there are no alternatives available to control the spread of a wildland fire.

W-3. Fires near wetlands will be ignited when wetlands are too moist to sustain fire spread, thereby minimizing impacts to wetlands.

W-4. To the greatest extent possible, mechanical treatments will not occur in wetlands.

W-5. Wetlands may be used as natural boundary for prescribed fires. When a wetland area is being used as a boundary, the control line will occur in adjacent uplands, not in wetlands.

W-6. Prescribed fires will not occur more frequently than the time required for native plant species to set seed.

W-7. Foams or other fire retardants will not be used in or near wetlands.

W-8. Firebreaks or firelines will be constructed in previously disturbed areas whenever possible.

W-9. Chipped material will not be spread in wetlands.

Special Status Species

SS-1. Known populations of special-status plant and animal species will be monitored to ensure long-term impacts are avoided. Known populations of special status species will be avoided when locating helispots or spike camps.

SS-2. In Spotted Owl Habitat

- annually identify and map areas where spotted owls are nesting,
- protect occupied and previously used nest sites from unplanned ignitions,
- do not conduct prescribed burns within 400 meters of an occupied or previously used nest site,
- do not conduct mechanical treatments with mechanized equipment within 400 meters of an occupied or previously used nest site between February 1 and July 31 (breeding season),
- conduct post-treatment monitoring to ascertain any impacts.

SS-3. In Point Reyes Mountain Beaver Habitat

- identify and map areas known to support Point Reyes mountain beaver and areas that have habitat suitable for supporting Point Reyes mountain beaver,
- protect known and potential habitat from unplanned ignitions,
- establish buffer areas 30 feet wide around known habitat areas,
- conduct small burns (less than 100 acres) of mountain beaver habitat each year.

SS-4. Avoid conducting treatments during nesting season, March 15 through July 31, unless biologists can ascertain that birds are not nesting in the planned burn area.

SS-5. During the tule elk calving seasons, burns will be conducted in habitat away from areas where birthing and loafing of females and calves occur.

SS-6. To protect California red-legged frogs, areas to be treated by mechanical means or prescribed fire will have a buffer area of 30 feet established around known breeding habitat.

SS-7. The annual work plan for FMP implementation will be provided to NOAA Fisheries each year to allow that agency to monitor the types of projects proposed.

Cultural Resources

CR-1. Pre-Action

- Cultural resources will be considered during all fire management planning efforts.
- Fire management personnel and other staff will receive annual training on cultural resources and fire management actions.
- All cultural resources will be evaluated with respect to hazardous fuel loads. As needed, fuel loads will be reduced using methods commensurate with avoiding or minimizing adverse effects. Maintaining light fuel loads on and in close proximity to cultural resources will be emphasized. All areas slated for ground disturbing activities will be subjected to pre-action field surveys. This includes areas likely to be disturbed during future wildfires.
- Pre-burn survey will be conducted prior to all prescribed burns as dictated by resource distribution and vulnerability, vegetation and topography, and expected fire behavior.
- Consultation with local Native American communities will continue to occur in the context of fire management actions. Spiritual sites and important plant communities will be identified and appropriately managed for preservation, maintenance, and/or enhancement.
- Computer and other databases containing cultural resources data will be created and maintained, and made available to fire management personnel in the event of emergencies.
- Cultural resources specialists from adjacent land management agencies will be consulted in order to coordinate mitigation efforts prior to planned and unplanned fire management actions.
- Appropriate cultural resources monitoring protocols will be established and implemented.
- Potential research opportunities to study the effects of fire management actions on cultural resources will be identified.

CR-2. During-Action

- A cultural resource specialist or resource advisor will be present during all fire management actions where recorded and unrecorded resources of interest are considered at risk. Additional survey will be conducted on an as-needed basis.

- Observations of fire behavior and other variables will be made with respect to recorded cultural resources and/or areas with high probability of containing unrecorded cultural resources.
- Cultural resources data will be shared with fire management personnel as needed to avoid or minimize adverse effects.
- A cultural resource specialist or resource advisor will educate fire management personnel about cultural resources and the potential impacts of fire management actions.

CR-3. Post-Action

- The post-action condition of all recorded cultural resources will be assessed. Resources requiring stabilization or other treatment will be mitigated.
- As appropriate, post-action survey will be conducted in previously surveyed and unsurveyed areas. Previously unrecorded cultural resources will be assessed for condition, and stabilization and other protection needs.
- Monitoring and research data will be compiled, evaluated, and used to help refine cultural resource compliance for fire management actions.

Human Health and Safety

HH-1. Firefighters will be frequently rotated and allowed to rest or sleep when needed, and firelines and safety zones will be used to minimize exposure.