

**FINDING OF NO SIGNIFICANT IMPACT**  
**FIRE MANAGEMENT PLAN**  
**LASSEN VOLCANIC NATIONAL PARK**

## **Introduction**

Wildland fire has long been recognized as one of the most significant natural processes operating within and shaping the northern Sierra Nevada and southern Cascade Mountain ecosystems. Virtually all vegetation communities show evidence of fire dependence or tolerance. Many forest types in the park have been shaped by frequent fire return intervals (average 9 years; range 2-32 years) as evidenced by park research. At the same time wildland fire has the potential to threaten human lives and property. Consequently, there is a need to manage wildland fire so that threats to humans and property are reduced, while at the same time restoring and/or maintaining its function as a natural process. The 2003 General Management Plan (GMP) gives the vision for the future management of the park's wilderness and the role that fire will play in achieving that vision. The GMP states that "fire is recognized as a normal process necessary for the restoration of natural vegetative communities [within wilderness]" and that "fire is used to help achieve natural processes."

During the fall of 2003, a meeting was held between Lassen National Forest and NPS staff to discuss the merits of continuing with an Interagency Fire Management Plan. It was decided at that time that because the Forest's FMP already included management of the Caribou Wilderness, the Park's FMP would not include it. It was also decided at this meeting that when each agency's FMPs are complete and include Wildland Fire Use (WFU), a Memorandum of Understanding (MOU) would be written to address WFU fires crossing agency boundaries.

## **Purpose and Need**

NPS policy directs that every park having vegetation capable of burning must have a fire management plan, and that the fire management plan must be accompanied by an environmental assessment to document the environmental consequences of the proposed actions (*NPS Director's Order 18*). The park's first fire management plan was written in 1982. Additional fire management activities were assessed and documented in an Environmental Assessment (EA) and plan in 1993. The 1993 Fire Management Plan was again updated in 1998 to comply with national policy changes.

The park is currently operating under a fire management plan and EA written in 1993 and updated in 1998. There is a need to update the Fire Management Plan to be in compliance with recently developed or updated policy and planning directives.

The nine goals of the new Fire Management Plan as outlined in the EA are:

- 1) ensure that firefighter and public safety is the first priority in every fire management activity;
- 2) restore and maintain desired regimes to the maximum extent practicable so park ecosystems exhibit a high degree of health and function;

- 3) protect Cultural Resources (including prehistoric sites, ethnographic resources, cultural landscapes, and historic structures) from adverse influences of wildland fires, fire suppression, prescribed fires, and manual/mechanical treatments;
- 4) protect sensitive Natural Resources from adverse influences of wildland fires, fire suppression, prescribed fires, and manual/mechanical treatments;
- 5) reduce hazardous accumulations of fuels in developed areas, near structures, roadways, wildland-urban interface areas, and cultural resources such as historic structures;
- 6) maintain preparedness for fire response;
- 7) maximize the efficiency of the fire management program by coordinating with other park divisions and neighboring agencies;
- 8) evaluate the costs and benefits of alternative fire management strategies to ensure that financial costs are commensurate with protection or enhancement of resource and wilderness values; and
- 9) integrate fire management with all other aspects of park management and operations.

## **Selected Alternative**

The selected alternative has not been changed or altered in any way since the publication and public review of the EA. Under the selected alternative, described in the EA as the proposed action and preferred alternative, the National Park Service will institute a management program that emphasizes an ecosystem restoration approach.

This alternative meets the purpose and need through the designation of two fire management units that correspond roughly to areas of 1) undesirable fire risk to infrastructure or leaving the park; and, 2) designated wilderness. This alternative includes suppression of wildland fires, provides for prescribed fires and wildland fire use, and allows manual fuel treatments as a fire surrogate. In addition, this alternative adds minimal use of mechanical thinning around resource values at risk that are not within the wilderness boundary.

Under this alternative, 36% (38,700 acres) of the park's total land base will be treated using prescribed fire over a 10-year period. The majority of the prescribed fire projects are strategically located to aid in creating a defensible boundary in support of the Wildland Fire Use program, while at the same time restoring natural fire regimes to a significant portion of the park. Also under this alternative, 20% (21,000 acres) of the park's total land base will be treated with wildland fire use if the appropriate conditions arise. Furthermore, 1% (1,000 acres) of the total land base will be manually treated and 150 acres (less than 1%) will be mechanically treated in order to achieve healthy and fire resistant forests within certain developed areas.

### ***Fire Management Unit-1 BOUNDARY: (29,766 acres)***

The Boundary FMU consists of discontinuous areas and discrete patches found along the park's north, south, and west boundaries. This FMU exists in part because the administrative boundary of Lassen Volcanic National Park does not coincide with natural barriers to fire. Fires originating in the park could cross administrative boundaries if left unchecked, and vice versa. Depending on the management objectives of the park's neighbors for particular areas, such fires could complicate or jeopardize the neighbor's ability to meet its objectives. In other cases where management objectives for the park and its neighbor complement one another, prescribed and wildland fires will be allowed to cross the administrative boundary.

All fires within this FMU will be evaluated for the appropriate management response. Restoring the lands within this FMU to a natural fire regime is a primary resource management goal, yet the risk of

undesirable fire effects to infrastructure or the risk of a fire leaving the park is sufficient to make suppression the default strategy. Wildland Fire Use will only be considered in this FMU when:

- The fire has obvious barriers to spread
- Fire movement is into the WFU unit or not towards developed areas or out of park.
- When the fire happens late enough in the season where analysis shows limited fire movement, or when environmental factors (weather, fuels, and topography) suggest no problematic fire behavior.
- Fire can be actively secured on Park boundary flank so movement out of the Park is unlikely.
- There is coordination with the neighboring Lassen National Forest.

In developed areas of the park, manual (hand tools or hand operated power tools) and/or mechanical (large mechanized equipment) fuel treatments are currently the best options available for reducing tree densities and overall stocking to sustainable levels. From a forest health perspective, selectively reducing tree densities and stocking levels through careful thinning has been shown to improve stand vigor and reduce insect and disease mortality. From a fire management perspective, reducing tree densities in overgrown stands is necessary to break up vertical and horizontal distribution of ladder fuels so that developed sites and surrounding forests can be adequately protected from wildfire.

Only 150 acres will have the potential for being treated mechanically and all of those acres surround Resource Values at Risk that are not within the wilderness boundary.

Quantitative assessments of forest stands within each area will be made to determine whether fuel treatments are necessary. To do this, stand condition indicators including basal area (BA) stocking, stand density index (SDI), stand resiliency index (SRI) will be derived from statistically significant sample plot data, and then compared with site carrying capacities (site quality). Site quality will be determined for each stand using standard forestry practices and published yield tables.

Basal area (BA) is a measure of stand stocking that describes the proportion of an area that is occupied by tree boles. Basal area is more meaningful than tree density because large trees contribute considerably more to stocking and use more resources than small trees. The “fully stocked” BA is a threshold value used to represent complete occupancy of a site. Values that exceed this value are considered above sustainable carrying capacity. Stand Density Index (SDI) is another measure of stocking that is based on the relative relationship between tree density and the average tree size in the stand. SDI differs from BA in that it is not dependent on site quality or stand age. Maximum recommended SDI values represent thresholds beyond which growth and vigor decrease and susceptibility to insects and pathogens increase. Stand Resiliency Index (SRI) is a relative measure of the potential risk of forest stands to crown fires. SRI is a function of tree size, tree density, and crown characteristics.

All of the above stand indicators measure very high values within many of the park’s low elevation forests. This means that some low elevation forests could become candidates for manual and/or mechanical fuel treatments where these forests come into contact with developed areas. For example, at Manzanita Lake, the location of the park’s largest and most popular campground, mean BA is 36%-48% over carrying capacity, and several stands exceed 500 ft<sup>2</sup>/acre (105%-123% above carrying capacity). Likewise, the average SDI is approximately 30% above the maximum sustainable value. SDI values within individual stands can rise to as high as 105% above maximum sustainable value. And finally, average SRI values indicate that Manzanita Lake campground is at high risk for crown fire spread. Tree density in the campground currently exceeds 690 trees per acre. Tree densities exceeding 300 trees per acre are generally considered very high.

The overall strategy to achieve healthy and fire resistant forests in developed areas will vary from site to site. For example at Manzanita Lake dense, pole-sized thickets of white fir will be thinned heavily underneath desirable large pine and fir trees and in interspaces where planting and natural regeneration of shade intolerant pine will occur in the future. More variable thinning intensities will be applied elsewhere to maintain screening cover and spatial heterogeneity, while keeping in mind the overall goal of reducing stocking levels to more sustainable levels. A typical thinning target is to project stand growth to carrying capacity 20 years after treatment. Therefore using a combination of diameter limit cut thinning and drip line radius cut thinning, BA will be reduced to 75% of maximum and SDI to 64% of maximum. A more natural stand structure will result as evidenced by average stand diameter (quadratic mean diameter) increasing from 9" to 19".

All wood materials — both merchantable and unmerchantable — generated from thinning projects will be removed from the park. An exception might be small amounts of wood chips kept for designated projects. Soils will be protected by using low impact rubber tire skidders, designating before hand all skidding routes in efforts of avoiding sensitive areas, conducting projects when soils are dry, and de-compaction of soils in the vicinity log decks following removal of logs. Pine slash will be promptly removed from the site to reduce buildup of bark beetles. Stumps will be flush cut or ground with a stump grinder and treated with an anti-fungal agent to prevent spread of annosus root disease. Wildlife surveys will be conducted.

All management strategies are allowed in this FMU including: wildland fire suppression, prescribed fire, limited wildland fire use and manual and mechanical treatments. However, prescribed fire and manual and mechanical treatments will be the primary strategies used for hazard fuel and restoration objectives in this FMU. Planned treatments total 19,950 acres (or 67% of the FMU area). 1,000 acres will be treated with wildland fire use, 18,000 acres will be treated with prescribed fire, 800 acres will be treated with manual thinning treatments, and 150 acres will be treated with mechanical thinning treatments.

### ***Fire Management Unit-2 WILDLAND FIRE USE (76,606 acres)***

The Wildland Fire Use FMU is located at the heart of the park, interior to the Boundary FMU. Most of this FMU is designated wilderness. In this FMU wildland fire use strategies will be employed when a naturally ignited fire occurs under favorable environmental and spatial conditions, creating specific desirable resource benefits for the life of the fire. If a wildland fire use fire does not continue to meet resource objectives, the appropriate suppression response will be employed.

Managed wildland fire, with the addition of prescribed fire, will be the primary tools used to meet resource objectives. All naturally occurring fires will be evaluated for their potential to accomplish resource objectives through the Wildland Fire Implementation Plan (WFIP) process. Up to 26% of the acres in this FMU will be treated using managed wildland fire (up to 20,000 acres) over the 10-year treatment period. This proportion of managed wildland fire takes into account an objective of managing at least one wildland fire per season based on historical mean fire sizes of 1100 acres (range 100-3800 acres).

In addition to wildland fire use, 20,700 acres will be treated with prescribed fire, and 200 acres will be treated with manual thinning treatments. All fire management activities within the Wilderness Area will employ the minimum actions and tools necessary based upon the Minimum Requirement and Minimum Tool determination and will follow established Minimum Impact Suppression Tactics (MIST) implementation guidelines. Minimum Tools used may include a variety of hand tools, chainsaws, motorized pumps with hoses, and, on project specific cases, helicopters. All of these potential tools will be analyzed prior to each fire event to determine if they are indeed the minimum tool necessary to accomplish the goals set forth in the Fire Management Plan.

## **Alternatives Considered**

The environmental assessment evaluated three alternatives; a no-action alternative, an alternative that focused on wilderness values, and the preferred alternative described above. The no action alternative would have continued the implementation of the 1993 Fire Management Plan and 1998 Amendment. This alternative would have treated 9% (10,000 acres) of the total land base with wildland fire use and 24% (25,500 acres) with prescribed fire. This alternative did not include manual and/or mechanical treatments as a strategy for reducing hazardous fuels, restoring forest structure, or protecting resource values at risk. The second alternative, referred to as the wilderness values emphasis, included the treatment of 21,000 acres (20%) with wildland fire use, 9,200 acres (9%) with prescribed fire, and 1,000 acres (1%) with manual thinning. This alternative responded to the importance of protecting wilderness values, by promoting fewer fire management activities within wilderness.

## **Environmentally Preferred Alternative**

The environmentally preferred alternative is determined by applying criteria identified in Section 101 of the National Environmental Policy Act (NEPA) to each alternative considered. In accordance with the NEPA, the environmentally preferred alternative will best: (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (2) assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings; (3) attain the widest range of beneficial uses of the environment without degradation, risk of 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 that supports diversity and variety of individual choice; (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approaching the maximum attainable recycling of depletable resources.

The preferred alternative to implement the ecosystem restoration management approach is also the environmentally preferred alternative. After review of potential resource and visitor impacts, and developing mitigation measures for impacts to natural and cultural resources, the preferred alternative achieves all the goals and objectives that are necessary to successfully restore the park's natural fire processes. Under this alternative, fire management activities will help restore natural fire regimes, including the influences on native vegetation function and structure. This alternative will reduce hazardous fuel loadings in the park to a greater extent and will help protect park resources and adjacent lands from the threat of future wildfires in a more comprehensive manner. This alternative best protects and helps preserve the historic, cultural, and natural resources in the park for current and future generations.

While the preferred alternative was able to meet all the goals and objectives set forth in the EA, both the no-action alternative and the wilderness values alternative were unable to meet two of the nine objectives. The two objectives that could not be achieved under these alternatives were: 1) treat 15% of the parks burnable landscape, under prescription, over the next five years in order to restore and maintain natural fire regimes to the maximum extent practicable so natural ecosystems can operate essentially unimpaired by human interference, and 2) reduce fuels in developed areas, urban interface boundaries, and cultural/historic zones to a level where at 90<sup>th</sup> percentile weather conditions, average flame lengths would be 4 feet or less. Furthermore, the overall plant habitat and diversity will be more greatly improved under the preferred alternative because of the increased acreage that will be treated. This, in turn, will lead to a more greatly

improved wildlife habitat as well as a better visitor experience in the long term. Also, overall impacts to cultural resources will be lower under the preferred alternative because of the increased treatment of fuels. Implementation of increased fuel management projects will decrease the total area where moderate or high intensity fire could occur, thereby reducing the overall potential for impacts to cultural resources from catastrophic wildfire.

A wilderness Values Emphasis Alternative was evaluated in the EA in order to determine if there was a viable alternative that would allow for fewer fire management activities within the Wilderness Area while still achieving the necessary restoration of the park's natural processes. Under this alternative, there would have been no prescribed fires within Wilderness. While short-term impacts due to fire management activities would have been reduced under this alternative, it would have only allowed for the treatment of 31,200 acres (29%) of the total park acreage. The preferred alternative, on the other hand, allows for the treatment of 60, 850 acres (57%) of the total park acreage, which is the level of treatment deemed necessary in order to return the park to a more natural and healthy state and to fulfill our responsibilities as trustees of the park's environment for future generations.

Because of the ability of the preferred alternative to meet all of the objectives that were determined necessary in order to successfully restore natural processes, and because of the environmental benefits listed above, the preferred alternative is also the environmentally preferred alternative.

## **Why the Selected Alternative Will Not Have A Significant Effect On The Human Environment**

In evaluating the Selected Alternative, NPS decision makers considered the NEPA Regulations criteria for significance and this section presents the results of the assessment.

Under the selected alternative, potential impacts to soil could result from both direct fire effects and from fire holding and suppression activities. Both wildland fire use and prescribed fire will reintroduce fire into areas where fire has been excluded over the last 100 years, which may cause slightly more intense fires due to fuel buildups. Both wildland fire use and prescribed fire actions could reduce vegetative cover in the burned areas. On steep or failure-prone slopes, this loss of vegetation could lead to localized soil erosion. Some areas of heavy fire concentration will affect soil chemical composition from the extreme heat that could be generated, though overall, the reintroduction and continued use of fire in the park will reestablish natural erosion processes and soil properties. These effects to soil will be minor, short-term and localized.

Wildland fire use, prescribed fires and fire suppression activities will all require the construction of fire lines to confine them either as direct attack or indirectly within predetermined boundaries. Avoidance of steep up and down slope construction, controlling burn intensities; the use of natural boundaries rather than constructed fire lines; and post-fire rehabilitation of firelines will mitigate the potential erosive effects of such fire lines, which will be minor and short-term.

Some fire prep activities include the use of hand piling and burning debris to eliminate fuels while reducing smoke impacts and increasing the controllability of the fire. These activities will combine to increase the local impacts on soils due to the large amount of accumulated fuels and increased temperatures over a smaller site. The size of these impact areas, however, are expected to be relatively small (usually in the range of 10 feet by 10 feet) and will be mitigated by burning the piles when the soils are saturated by fall rains, resulting in very minor, short-term effects to soil.

Manual fuels treatment (the use of hand tools or hand operated power tools) is used to clear or prune herbaceous and woody species to effectively reduce hazardous accumulations of wildland fuels and to create defensible space near structures. Material cut or gathered through manual treatment will either be cast back on site or be disposed of by piling and burning. Little or no soil impacts are expected from manual thinning treatments. Hazard fuel reduction work using chainsaws is not expected to disturb soils. There would be very minor, short-term and localized effects to soil from pile burning activities, though these impacts will be mitigated by burning when soils are saturated by fall rains.

Mechanical fuels treatment (the use of larger mechanized equipment such as front end loaders and tub grinders) has the same goal as manual treatment; to reduce hazardous accumulations of wildland fuels thus creating a defensible space near structures. It also will serve to improve the health of the forest in developed areas. Mechanical treatments within 150 acres of the park's developed area will use heavy equipment (such as a boom truck and front end loader) to move large boles, with the restriction that the equipment would not be driven outside of existing road corridors or used outside of developed areas. Material cut or gathered through mechanical treatment will either be cast back on site, be disposed of by piling and burning or depending on the size, quantity and location, may be chipped and removed from the site or sold. There will be very minor, short-term and localized effects to soil from pile burning activities as well as minor short-term (2-5 years) adverse effect to soil nutrition because of slash removal.

The selected alternative will also have minor effects on water quality. Water quality can be affected both by fires and by fire management activities. Small fires and fires of low intensity will be expected to have very little effect on water quality. Fires that become large (because they escape initial attack or because they are managed as wildland fire use actions), could have minor and short-term effects on water quality in a sub-drainage or drainage due to increased ash and woody debris deposited into waterways. This type of deposition could increase turbidity downstream from the fire. Loss of vegetation could lead to increased erosion and sediment loading in surface water resources in the park. These effects are considered normal and natural in wildland fire use regimes. These naturally occurring, short-term, minor effects are not expected to cause long-term detrimental effects to water quality.

Under the selected alternative wetlands will likely be used as naturally occurring fire breaks during wildland fire use and prescribed fire. Under these management strategies, park wetlands will only be minimally affected by fire, having a natural ability to withstand fire due to high fuel moisture levels and (very often) standing water. Fire line construction will be avoided in wetlands. Using indirect attack outside the wetland area for fire suppression will reduce or eliminate wetland impacts. Through the use of mitigation measures, there will be negligible impacts to wetlands. The use of manual and/or mechanical fuel treatments will not result in any impacts to wetlands. Retardants will only be used when the risk to life or property is greater than any potential risk of resource damage from the retardant. Retardant will be kept away from all lakes, streams, and wetlands at all times, unless it is needed in extreme circumstances in the face of the loss of life or property.

The selected alternative will have a beneficial effect on vegetation. Generally, hazard fuel treatments will result in the removal of shrubs and trees, and will help restore conditions such that natural fire could be returned to those treated areas in the future. Restoring natural fire regimes within the park through the use of wildland and prescribed fire will benefit the plant communities (chaparral, and pine-dominated mixed-conifer forests) whose health and biologic diversity rely on the presence of fire. The overall benefits of fire include reduction of duff material, recycling of nutrients, reduction of accumulating fuels, pruning of trees which reduce ladder fuels into the canopy, and vegetative regeneration through sprouting and fire-stimulated germination. Over time, restoring natural fire regimes will result in an increase of fire-tolerant species, while those fire-intolerant vegetative species will decrease.

Most of the 24 special status plant species within Lassen Volcanic National Park (none of which are on the U.S. Fish & Wildlife Service's Threatened & Endangered Species list) are found in environments that are unlikely to burn; therefore, fire suppression activities rather than fire presence is likely the greater hazard to these plant populations. Thirteen of the species occur in aquatic habitats such as Little Willow Lake. The use of an on-site Resource Advisor and Minimum Impact Suppression Tactics (MIST) during fires associated with Little Willow Lake and other aquatic habitats will minimize potential impacts to these species. Another 10 plant species are associated with the steep talus slopes and dry rocky ridges of the park's major peaks. The sparse fuels in these areas make the chance of a fire occurring in this type of habitat fairly remote.

Under the selected alternative, mechanical fuel treatments will target forest areas near values at risk (not within wilderness) that are also characterized by unnaturally-high fuel loadings. Thinning specific developed areas will reduce current fuel loadings, reduce potential fire severity, improve forest health, and reduce the wildfire hazard near highly-valued resources. By reducing competition around the fine root zone of pines, these trees will be provided with a competitive advantage and will significantly increase their chances of surviving attacks by insects and disease during the next drought. By reducing stocking levels, growth rates, live crowns, and overall stand vigor will increase, and the probability of insect and disease mortality will be reduced. Planted areas and openings created for natural regeneration will provide vigorous Jeffrey and ponderosa pine to replace overstory trees in the future. Vigor and growth rates of existing Jeffrey and ponderosa pines will be improved and these trees will develop into larger trees at a faster rate. Minor, localized, short-term (2-3 years) adverse effects to residual white fir, but not to pine, may occur as a result of thinning shock.

Park ecosystems evolved in response to periodic fire and other disturbance events. As a result, individual wildlife species that persist as part of these ecosystems either benefit from fire or are tolerant of it over the long-term, despite possible short-term loss of some individuals and habitat. As such, wildlife populations that currently occur in the park existed here in the presence of fire under historic fire regime conditions. There will be a range of both adverse and beneficial impacts to wildlife, depending on the species affected, and the season, timing, intensity of the fire and the rate of fire spread. These impacts will include alteration of habitat, species composition and population levels. While some loss or displacement of individual animals will inevitably occur in burned areas, there will be long-term benefits to some populations as a result of restoration of fire-created habitat diversity. Wildlife will have a wide variety of reactions to fire, including burrowing, fleeing and flying. Some species, such as terrestrial amphibians, reptiles, insects and small mammals may survive fast-moving, low intensity fires by burrowing or fleeing, while some larger animals will not be able to move out of the fire path in time, becoming disoriented by the fire. Fires also often result in a temporary increase in insect-feeding birds. Other species that may increase following fire include scavenger/predators such as ravens. Overall, forage species are often enhanced by an increase in nutrients, resulting in similar increases or benefits to populations dependent on these species. With the nutrient-rich, post-fire flush of herbaceous vegetation increasing browse for deer and other animals, prey-stalking opportunities also will increase. Such populations often increase where suitable habitat has burned. That habitat may be enhanced or expanded. The minor effects of fire on wildlife may be short or long-term depending on vegetation recovery and fire severity.

There will be short term adverse impacts to wildlife due to noise from thinning activities (chainsaws, personnel, etc) and disturbance of the area. Because of the small amount of thinning that would be conducted (1,000 acres manually and 150 acres mechanically) the impacts to wildlife will be minimal. The newly-created fuel breaks will have positive impacts by reducing the risk of stand destroying fires that could move through the park. Mechanical thinning will only be conducted around developed sites that already have disturbance from human activity so the wildlife that occupy these areas are already acclimated to human disturbance. The preferred alternative will provide a greater number and



distribution of large, old trees throughout the developed areas and will result in minor, long-term benefits through enhanced habitat for *Myotis* bats as forest health and structure is restored.

Direct effects of natural fire (or unplanned human-caused ignitions) on park waters will include changes in water and soil chemistry, water temperature and vegetation associated with water resources. Indirect effects could include changes in fish and amphibian species composition, habitat dynamics, and accumulation of woody debris, water yield, hydrologic processes, erosion patterns, and nutrient cycling. These changes may result in either beneficial or adverse impacts, depending on factors related to fire severity, season, location, vegetation type, and magnitude of burns. Increased sediment yield and water temperatures would tend to be short-lived, unless a fire was of extreme severity. Increases in runoff and nutrient flux will be expected to continue for several years (as many as ten years), particularly after large fires. Although a natural process, large or severe fires could create minor negative impacts on fisheries if they caused changes in water quality at a time when the fishery was most vulnerable such as spawning periods.

There are currently no wildlife species listed as endangered within Lassen Volcanic National Park. There is one species, the bald eagle, that is Federally listed as threatened that occurs in the park. Mitigation measures that include a limited operating period from January 1<sup>st</sup> to August 31<sup>st</sup> (nesting season) around all known bald eagle nest sites will be implemented.

There are several potential noise sources associated with fire management activities. These include vehicular traffic, engines, chainsaws, and aircraft. With the implementation of mitigation measures and the completion of a “minimum tools” process that will assess the use of chainsaws in wilderness areas prior to any proposed use, implementation of the preferred alternative will have minor, short-term impacts to fire crews, the public, and wildlife.

National Ambient Air Quality Standards and California State Air Quality Regulations (Title 17) will be met in order to protect public health and welfare. For prescribed fires, there are three principle strategies that will be used to manage smoke and reduce air quality effects. They include: 1) avoidance, which relies on monitoring meteorological conditions when scheduling prescribed fires to prevent smoke from drifting into sensitive receptors, or suspending burning until favorable weather (wind) conditions exist; 2) dilution, which controls the rate of smoke emissions; and 3) emission reduction, which utilizes techniques to minimize the smoke output per unit area treated. For wildland fire use events, adherence to the *Wildland Fire Use Communication and Coordination Protocol* will be followed to ensure appropriate coordination with the affected Air District, and agreed upon smoke mitigation actions. The preferred alternative could influence smoke emissions depending on the burning conditions and desired fire behavior parameters. These impacts will be mitigated through proper implementation of established smoke management guidelines. Therefore, the implementation of this alternative will result in minor, short-term effects on air quality.

Possible factors impacting visitor use and experience include smoke, noise, changes in scenic vistas, and visitor use restrictions. Any use restrictions imposed by the park will be temporary, except in the case of severe fires located nearby. If located near developed areas or within view-sheds of the park, prescribed fire and wildland fire use will have short-term impacts on foreground scenic quality through the killing of small understory trees. Over time, as the areas green up and larger residual trees become more visible, scenic quality would improve above pre-fire levels. Wildland fire use would have effects on background long-distance vistas. However, after the first couple of years, when dead trees brown and shed their foliage, they would add visual texture to an already heavily textured landscape created by the effects of topography, soil, and different species composition and age classes of trees.

Fire management activities near developed areas, highly frequented trails and in wilderness areas, or during times of special park events or holidays, could impact the recreational experience of some visitors. To minimize these potential noise and visual impacts, the park will not initiate hazardous fuels reduction activities, such as prescribed fire, near developed areas and trails during holidays. In addition, the park will limit, to the extent practicable, hazard fuels reduction efforts near developed areas and trails to periods of low recreation visits, or temporarily prohibit access to certain areas where treatments are being undertaken. In addition, educational/informational materials will be developed and distributed to the wilderness visitor on what to expect during fire management activities including potential noise from chainsaws during line construction, smoke dispersion, safety, helicopter and airplane use, and information on where and when these activities will occur.

The visitor experience will be adversely affected by the dust, fumes, and noise resulting from the mechanical thinning, but only in a minor way because the mechanical thinning will take place in the fall when the campgrounds are closed for the season. Short-term adverse effects associated with the transport of logs and chips will likely be a minor adverse impact on a small number of park visitors. Minor short-term adverse effects caused by negative perception of forestry practices will be compensated for by comprehensive interpretive programs aimed at educating visitors about the long-term benefits of forest health management. Healthy campground forests resulting from the project will be a minor, long-term benefit to scenic values which affect the visitor experience. The preferred alternative also reduces the likelihood of a devastating, high-severity fire moving through these areas of high visitor use and thus reduces the potential for a complete loss of an area that is critical to many visitor's experience.

Factors most likely to adversely impact public and fire-fighter health and safety include accidental spills, injuries from the use of fire-fighting equipment, smoke inhalation, and, in severe cases, injuries from wildland or prescribed fires. With the implementation of mitigation measures and best management practices, adverse impacts to human health and safety will be minor and short-term. National Ambient Air Quality Standards and California State Air Quality Regulations (Title 17) will be met in order to protect public health and welfare. Also, with the manual and mechanical thinning within the developed areas, there will be a reduction in hazard trees that will result in a minor, long-term beneficial effect on human health and safety.

Historic properties including archeological sites and districts, historic structures, ethnographic resources, cultural landscapes, and museum objects are subject to impacts during fire events. Direct impacts include the effects of fire itself on cultural materials and fire management operations such as fire control line construction or crew and equipment staging. Indirect impacts occur when fire and/or associated fire management operations result in changes to the local environment such as increased erosion or increased exposure of artifacts to looting resulting in potential effects to cultural resources. Strategies to protect cultural resources will be implemented for all planned management projects reducing or eliminating impacts to cultural resources. The resource values at risk include: Hat Creek private lands and buildings; Twin Lakes Ranger Station; Horseshoe Lake Ranger Station; Summit Lake Ranger Station, campground, horse camp, and water supply; Juniper Lake Ranger Station, private lands, campground, and horse camp; Mineral Headquarters administrative site; Manzanita Lake Ranger Station, campground, housing, museum, education center, and water supply; Mt. Harkness Fire Lookout; Warner Valley Ranger Station, historic buildings, campground, and Guest Ranch; Southwest Entrance Visitor Services Facility, campground, and water supply; Butte Lake Ranger Station, campground, and water supply; Crags Campground; and Lost Creek Campground. These values at risk will be protected based on the most natural defensible distance rather than the strict ¼ mile buffer that was utilized in the park's previous Fire Management Plan.

Implementation of fuel management projects will decrease the total area where moderate or high intensity fire may occur, reducing the overall potential for impacts to cultural resources from catastrophic wildfire.

The preferred alternative could adversely impact unrecorded cultural resource sites depending on incident-specific fire behavior and associated fire suppression tactics, but these impacts can be mitigated through proper implementation of minimum impact suppression guidelines and cultural resource protection-specific mitigation measures.

Depending on the severity of a given fire, some operational impacts may occur. These impacts include temporary closure of park roads and temporary cancellation of interpretation programs. Administrative centers will experience short increases in workloads and may have to re-arrange daily operations, and resource management and ranger staffs will be called upon to be part of the fire organization. In extreme cases, park facilities might need to be evacuated. To the extent possible, all park operations will continue to provide a quality visitor experience, taking into account visitor and employee safety, and efficient response to the fire incident.

The most probable socioeconomic impact from the selected alternative will be the loss of revenues to the Park and local tourism-related businesses as a result of use restrictions, road closures, or partial park closures in response to fire and smoke. Use restrictions and road closures will be temporary and infrequent, and of a nature that will not significantly reduce National Park Service revenues generated from entrance fees or compromise local tourism businesses. A large wildfire that destroyed developed areas within Lassen Volcanic National Park or that resulted in the prolonged closure of part or all of the Park would have significant socioeconomic impacts (e.g. damage and loss of property; temporary and prolonged loss of jobs; and loss of revenues to the Park and surrounding businesses from a decrease in tourism); however, the likelihood of such a fire is reduced with the implementation of the preferred alternative. With the inclusion of all the fire management tools in the selected alternative, the opportunity to use a wide variety of vendors is greatly increased. Therefore, local motels and restaurants could benefit from temporary fire crews. Other businesses might contract services such as water, portable toilets or even fuel. Local contractors may also be utilized for mechanical fuel treatment projects. The implementation of the selected alternative will have minor effects on local and regional economies and no adverse effects on poor and/or minority populations.

Park wilderness values include natural, ecological, geological, cultural, scenic, scientific and recreational opportunities. One of the park's fire management goals is to restore and maintain fire regimes to the maximum extent practicable so natural ecosystems can operate essentially unimpaired by human influence. Wildland fire management activities within designated wilderness will adhere to "minimum tool" requirements of the 1964 Wilderness Act. While analyzing the potential impacts of each of the alternatives in the EA, the park's interdisciplinary team conducted a Minimum Requirement Analysis in order to determine whether human disturbance in wilderness during fire management activities was in the best interest of the resources. In that analysis, it was determined that the short-term and minor adverse impacts that would occur within wilderness under the selected alternative were necessary and that those adverse impacts were indeed outweighed by the long-term restoration benefits to the wilderness resources.

All activities within wilderness will also be put through a Minimum Tool Assessment prior to implementation of each activity. This is a documented process used to determine how to minimize activities effecting wilderness resources or visitor experience. When determining minimum tools, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. The selected alternative may still result in temporary impacts to wilderness character, particularly related to impacts on wilderness visitors, including the perception of solitude and a primitive, unconfined wilderness experience. These impacts may include the use of aircraft to detect, monitor and manage fires, as well as noise and activity from firefighting staff and equipment during operations. In addition to using the minimum tools required for each fire activity, fire management strategies will include the implementation of Minimum Impact

Suppression Tactics (MIST) in order to minimize or eliminate wilderness impacts during and after a fire event. Following significant fire suppression actions, burned area emergency rehabilitation plans may also be implemented under the direction of the fire management officer and the recommendations of a resource advisor. Impacts to wilderness under the selected alternative will be minor and short-term.

As described in the Environmental Assessment, there will be no affects on ecologically critical areas, environmental justice, waste management, transportation, utilities, land use, prime and unique farmlands, Indian trust resources, or resource conservation.

In addition, no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence have been identified, and implementing the preferred alternative will not violate any federal, state, or local environmental protection law.

### **Non-impairment of Park Resources**

Based on the impacts resulting from the selected alternative that are documented in the EA and summarized above, there will be no major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the 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 the Park’s General Management Plan or other relevant NPS planning documents. Consequently, the selected alternative will not result in impairment of resources or values.

### **Mitigation**

Every fire event within Lassen Volcanic National Park will be monitored, and each mitigation measure listed below will be evaluated to determine 1) if it was implemented as stated, and 2) if it was effective at mitigating the impact to the resource it was designed to protect. Monitoring reports will become part of the permanent record of each fire event.

Mitigation measures are prescribed to prevent and/or mitigate adverse environmental impacts that may occur from fire management activities. The following mitigation measures will be implemented.

### **Mitigation Matrix**

<b>Impact topic</b>	<b>Mitigation Measures</b>	<b>Responsibility</b>
Fire Management Activities	Whenever consistent with safe, effective suppression techniques, the use of natural barriers will be used as extensively as possible.	Park Fire Management Officer (FMO)
	Fire retardant agents must be on an approved list for use by the Forest Service and Bureau of Land Management.	FMO
	Mechanical equipment such as tractors, graders, bulldozers or other tracked vehicles will generally not be used for fire suppression or wildland fire use. The Superintendent can, however, authorize the use of heavy earth-moving equipment in extreme circumstances in the face of loss of human life and/or property.	FMO and Superintendent
	When handline construction is required, construction standards will be	

Impact topic	Mitigation Measures	Responsibility
	<p>issued requiring the handlines to be built with minimum impact. Fire control methods near cultural sites, especially the construction of control lines that expose mineral soil, will be developed in consultation with an archeological technical specialist to avoid adverse effects to cultural materials. All control lines will be rehabilitated. Erosion control methods will be used on slopes exceeding 10% where control line construction took place.</p> <p>All sites where improvements are made or obstructions removed will be rehabilitated to pre-fire conditions, to the extent practicable.</p> <p>Educational/informational materials will be developed and distributed to the park visitor and local communities on what to expect during fire management activities including potential noise from chainsaws during line construction, smoke dispersion, safety, helicopter and airplane use, and information on where and when these activities will occur.</p> <p>A rehabilitation plan as required by NPS-18, with the use of a Burned Area Emergency Rehabilitation (BAER) Team, will be formulated and implemented in advance of demobilization from major fire events.</p>	<p>FMO and Chief of Natural Resources (CNR)</p> <p>FMO and CNR</p> <p>FMO, Fire Education Specialist, and Chief of Interpretation and Cultural Resources (CICR)</p> <p>FMO and CNR</p>

Impact topic	Mitigation Measures	Responsibility
Air Quality	<p>The Park and local Air Quality Management Districts will hold an annual meeting prior to each fire season to discuss the previous years fire management activities and discuss what went well and how to improve.</p> <p>The park will comply with all Local, State, and Federal Air Quality rules and regulations.</p> <p>As all prescribed fires and wildland fire use (WFU) fires are unique, a Smoke Management Plan (SMP) will be completed for each project. Smoke Management Plans will include “Management Action Points” that will trigger smoke mitigation actions. Examples of management action points include: predicted weather, fire moving into heavier fuel loading, smoke impacts to communities, and confirmed complaints. Examples of smoke mitigations for prescribed fires include waiting for good air dispersion, using firing techniques that allow for better dispersion, having check lines in place to hold the fire in place should conditions deteriorate, finish ignitions early in the day to promote burn-out of fuels prior to evening inversions. Examples of smoke mitigations for WFU include checking part or all of the fire spread, advancing fire spread on days of good dispersion, applying water to cool the edges of the fire through the use of hoselays or helicopters.</p> <p>The park must obtain a burn permit prior to prescribed fires.</p> <p>Affects to Air Quality are considered as a part of the WFU go/no-go decision.</p>	<p>FMO</p> <p>FMO</p> <p>FMO</p> <p>FMO</p> <p>FMO and Superintendent</p>
Soil and Water	<p>Creek or river crossings will be limited to set and existing locations.</p> <p>Except for spot maintenance to remove obstructions and for in-stream structures to enhance pooling for pumping purposes, no improvements will be made to intermittent/perennial waterways, springs or seeps, trails, or clearings in forested areas.</p> <p>Fire lines will be located outside of highly erosive areas, steep slopes, and other sensitive areas.</p> <p>Fire control strategies will be sensitive to wetland values, and firelines will not "tie" into wetland or bog margins except when relying on those areas to naturally retard the fire without constructed line.</p> <p>Foams and retardants will not be used within 200 feet of any upstream surface waters.</p>	<p>FMO</p> <p>FMO</p> <p>FMO and CNR</p> <p>FMO and CNR</p>

Impact topic	Mitigation Measures	Responsibility
	<p>Mechanical fuel treatments will not be conducted within 200 feet of any surface water resource.</p> <p>Crews will implement Minimum Impact Suppression Tactics (MIST) to minimize and/or eliminate adverse soil impacts resulting from ground crew activities.</p> <p>Mechanical equipment will use multiple entry and exit points within a treated area to minimize concentrated soil compaction or soil disturbance impacts resulting from continued use of a single entrance and/or exit.</p> <p>Crews will implement MIST fire suppression guidelines to minimize and/or eliminate adverse impacts to surface water resources. These include:</p> <ul style="list-style-type: none"> <li>Preferred use of water for aerial drops</li> <li>Prohibition of fire retardant use in drainages specified by the resource advisor</li> <li>Restriction of the use of lakes as water sources as approved by the resource advisor</li> <li>Restriction of camps and toilet facilities from being located within 200 feet of surface water resources.</li> </ul>	<p>FMO and CNR</p> <p>FMO and CNR</p> <p>FMO and CNR</p> <p>FMO and CNR</p>
Visitor Experience and Use	Fire managers will consider potential impacts to visitor use and experience when determining management actions related to planned and unplanned incidents.	FMO and CICR
Wildlife	<p><b>Bald Eagles</b></p> <ul style="list-style-type: none"> <li>• A limited operating period (LOP) will be placed from January 1<sup>st</sup> to August 31<sup>st</sup> (nesting season) around all known bald eagle nest sites. This consists of a half-mile diameter circle around the nest tree.</li> <li>• Avoid disturbance within a half-mile diameter during the LOP. Disturbance includes mechanical thinning operations, controlled burning operations, line-clearing operations using power tools, heavy equipment use and aircraft noise.</li> <li>• No nest trees or known perch trees will be removed.</li> <li>• Avoid using Snag Lake as a helicopter dip site (unless approved by Resource Advisor) during fire suppression activities.</li> <li>• Use of helicopters during fire suppression will be allowed no lower than 1,300 feet (1/4 mile) above the canopy during the LOP within a half-mile radius of nest trees.</li> <li>• After the nesting season, cooler burn prescriptions will be used</li> </ul>	<p>FMO and Park Wildlife Biologist (WB)</p> <p>FMO and WB</p> <p>FMO and WB FMO</p> <p>FMO</p>

Impact topic	Mitigation Measures	Responsibility
	<p>and some degree of hazard fuel removal could be used to limit the potential for crown fires in nest areas and suitable habitat.</p> <ul style="list-style-type: none"> <li>• For prescribed burns implemented after the LOP, construct a fire line around the nest tree a radius of 50 feet and burn out from the fire line to protect the nest tree.</li> <li>• Park staff will continue to monitor bald eagle populations annually.</li> </ul> <p><b>California Spotted Owl</b></p> <ul style="list-style-type: none"> <li>• A limited operating period (LOP) will be placed from March 1<sup>st</sup> through August 31<sup>st</sup> (nesting season) around all known spotted owl nest trees. This will consist of a quarter-mile diameter circle around known nest trees.</li> <li>• Avoid disturbance within a quarter-mile diameter during the LOP. Disturbance includes mechanical thinning operations, controlled burning operations, line -clearing operations using power tools, heavy equipment use and aircraft noise.</li> <li>• No nest trees or known perch trees will be removed.</li> <li>• Use of helicopters during fire suppression will be allowed no lower than 1300 feet (1/4 mile) above the canopy within a quarter-mile diameter circle of nest trees during the LOP.</li> <li>• After the nesting season, cooler burn prescriptions will be used and some degree of hazard fuel removal could be used to limit the potential for crown fires in nest areas and suitable habitat.</li> <li>• For prescribed burns implemented after the LOP, construct a fire line around the nest tree a radius of 50 feet and burn out from the fire line to protect the nest tree.</li> <li>• Park staff will conduct surveys for spotted owls in treatment areas prior to ignition of prescribed fires.</li> </ul> <p><b>American Peregrine Falcon</b></p> <ul style="list-style-type: none"> <li>• A limited operating period (LOP) will be placed from February 1<sup>st</sup> through July 31<sup>st</sup> (nesting season) around all known peregrine falcon nest sites. This will consist of a half-mile diameter circle around known nest sites.</li> <li>• Avoid disturbance within a half-mile diameter circle during the LOP. Disturbance includes mechanical thinning operations, controlled burning operations, line -clearing operations using power tools, heavy equipment use and aircraft noise.</li> <li>• No known perch trees will be removed.</li> <li>• Use of helicopters during fire suppression will be allowed no lower than 1300 feet (1/4 mile) above the cliff within the half-mile diameter circle during the LOP.</li> <li>• Park staff will continue to monitor peregrine falcon populations annually.</li> </ul>	<p>FMO</p> <p>FMO and WB</p> <p>WB</p> <p>FMO and WB</p> <p>FMO and WB</p> <p>FMO and WB FMO</p> <p>FMO</p> <p>FMO</p> <p>WB</p> <p>FMO and WB</p> <p>FMO and WB</p>



Impact topic	Mitigation Measures	Responsibility
	<p data-bbox="391 262 732 296">Sierra Nevada Red Fox</p> <ul data-bbox="391 338 1182 474" style="list-style-type: none"> <li>• Construct a fire line around known den sites a radius of 50 feet and burn out from this line to protect the den.</li> <li>• Avoid controlled burning or manual or mechanical thinning projects if pups are known to be in the area.</li> </ul> <p data-bbox="391 506 613 539">Cascades Frog</p> <ul data-bbox="391 581 1200 709" style="list-style-type: none"> <li>• Lakes with current existing populations of Cascades frogs will be avoided as helicopter dip sites and drafting sites. A list of the current populated lakes will be provided by the Resource Advisor as required.</li> </ul> <p data-bbox="391 743 721 777">Little Willow Flycatcher</p> <ul data-bbox="391 819 1136 982" style="list-style-type: none"> <li>• Construct fire line around patches of willow or alder where known nest sites occur.</li> <li>• Park staff will conduct surveys for willow flycatchers in treatment areas prior to ignition of prescribed fires where suitable habitat exists.</li> </ul>	<p data-bbox="1226 233 1398 296">FMO and WB FMO</p> <p data-bbox="1226 365 1279 394">WB</p> <p data-bbox="1226 567 1398 596">FMO and WB</p> <p data-bbox="1226 632 1398 661">FMO and WB</p> <p data-bbox="1226 802 1398 831">FMO and WB</p> <p data-bbox="1226 1037 1398 1066">FMO and WB</p> <p data-bbox="1226 1102 1279 1131">WB</p>
Plants	<p data-bbox="391 1138 1170 1201">Park staff will clean fire management equipment prior to its use to prevent the spread of noxious weeds.</p> <p data-bbox="391 1239 1182 1335">Park staff will stage fire management operations away from known noxious weed infestations, and will construct fire lines away from known patches.</p> <p data-bbox="391 1373 1175 1436">Park staff will survey for noxious weeds in treatment units prior to ignition of prescribed fires.</p> <p data-bbox="391 1474 1190 1633">If threatened, endangered, or sensitive plant species are found in a treatment unit, a buffer surrounding the plants will be imposed that prohibits physical damage to the identified population. The assigned Resource Advisor will be consulted when determining the appropriate buffer.</p>	<p data-bbox="1226 1138 1295 1167">FMO</p> <p data-bbox="1226 1239 1409 1302">FMO and Park Plant Ecologist</p> <p data-bbox="1226 1373 1354 1436">Park Plant Ecologist</p> <p data-bbox="1226 1474 1354 1537">Park Plant Ecologist</p>
Cultural Resources	<p data-bbox="391 1677 1200 1803">Fire control methods near cultural sites, especially the construction of control lines that expose mineral soil, will be developed in consultation with an archeological technical specialist to avoid adverse effects to cultural materials.</p> <p data-bbox="391 1841 1192 1871">Prior to all prescribed fire and non-fire fuel treatments, project areas</p>	<p data-bbox="1226 1680 1386 1806">FMO and Network Fire Archeologist (NFA)</p> <p data-bbox="1226 1841 1289 1871">NFA</p>

Impact topic	Mitigation Measures	Responsibility
	<p>will be inventoried for cultural resources and strategies to negate or minimize identified potential adverse effects will be developed and implemented.</p> <p>During wildfire and wildland fire use events, mitigation measures will be implemented for previously identified cultural resources in affected areas, and for cultural resources identified during archeological surveys of fire control lines and staging areas.</p> <p>Fire retardant use will be prohibited in the vicinity of any historic structure, unless there is imminent threat from wildfire to the historic structure.</p> <p>A designated Cultural Resource representative will conduct an inspection and develop a plan to protect any existing or new cultural resources identified before and after prescribed fires.</p> <p>Cultural resource digital databases and GIS layers will be maintained in a current status and available on CDs during fire season to expedite the management decision making process.</p> <p>The Park Archeologist, Northern California Sub-cluster Fire Archeologist, or PGSO Fire Archeologist, if available, will be notified immediately in the event of wildfire or Wildland Fire Use (WFU) and will participate in the WFU go/no-go process.</p> <p>An archeological resource specialist and/or resource advisor is recommended if extended attack is required and the wildfire is in an archeologically sensitive area.</p> <p>When American Indian Cultural Sites are threatened by fire, or fire suppression activities then the affiliated American Indian Tribes will be notified.</p> <p>Identified historical structures, cultural landscapes, ethnographic and archeological sites determined eligible or listed on the National Register of Historic Places will be priorities in resource protection planning.</p> <p>All WFUs will include an archeological monitor as part of the incident management team if documented archeological resources are threatened or the fire is located in an archeologically sensitive area.</p> <p>An archeologist will participate in the planning and execution of rehabilitation efforts following wildfires and WFUs.</p>	<p>FMO and NFA</p> <p>FMO</p> <p>NFA</p> <p>NFA</p> <p>FMO</p> <p>FMO</p> <p>Park Cultural Resources Program Manager</p> <p>FMO and NFA</p> <p>FMO and NFA</p> <p>NFA</p>

Impact topic	Mitigation Measures	Responsibility
Wilderness Values	Wildland fire operations within the Wilderness Area will adhere to the requirements of the Wilderness Act, NPS Management Policies, and the NPS Director's Orders 18 and 41 Wilderness Preservation and Management.	FMO and CNR
	All fire management activities within the Wilderness Area will employ minimum actions and tools necessary based upon the Minimum Requirement and Minimum Tool Determination that will be conducted prior to every fire event.	FMO and CNR
	All fire management activities within the Wilderness Area will follow established MIST implementation guidelines, which call for the minimum amount of forces necessary to effectively achieve the fire management protection objectives.	FMO and CNR
	<p>All fire management activities within the Wilderness Area will follow established Rehabilitation Guidelines for Wilderness Fire Suppression Activities which include:</p> <ul style="list-style-type: none"> <li>Removal of flagging, garbage, and equipment;</li> <li>Cleaning fire pits of unburned materials;</li> <li>Covering newly established trails that were created during suppression efforts with brush, limbs, etc. in a naturally appearing arrangement;</li> <li>Replacing dug-out soil and/or duff and obliterating any berms created during the fire management efforts;</li> <li>If impacted trails have developed on slopes greater than six percent, construct waterbars ;</li> <li>Where soil has been exposed and compacted, scarify the top 2-4 inches and scatter with needles, twigs, rocks, etc;</li> <li>Depending on the time of year and/or possibility of a rainy period, possibly harvest and scatter nearby seed, or transplant certain native vegetation.</li> <li>Fill in and cover latrine with soil, rocks, etc.;</li> <li>Naturalize campfire area by scattering ashes in nearby brush and return site to natural appearance;</li> <li>Where trees were cut or limbed, cut stumps flush with ground; scatter limbs and boles out of sight in burned area; camouflage stumps and tree boles using rocks, dead woody material, limbs, soil, etc.;</li> </ul>	FMO and CNR

Impact topic	Mitigation Measures	Responsibility
	<p>Remove newly cut tree boles that are visible from trails or meadows; tree boles that are too large to be moved will be slant cut so a minimal amount of the cut surface is exposed to view;</p> <p>Leave tops of felled trees attached;</p> <p>Consider using explosives on some stumps and cut faces of the bolewood for a more natural appearance;</p> <p>Consider, if no other alternative exists, helicopter sling loading rounds and tops from a disturbed site when there has been an excessive amount of bucking, limbing, and topping;</p> <p>Replace any displaced rocks or streambed material that has been removed;</p> <p>A Resource Advisor will be made available to advise fire crews and to monitor resource damage;</p> <p>When Wilderness campsites or travel routes are closed during fire management activities, visitors will be rerouted to alternative travel routes or campsites;</p> <p>Mechanical fuel treatments will not be allowed within the Wilderness Area unless the Superintendent authorizes such use in extreme circumstances in the face of loss of human life and/or property, and only where determined in advance to be the minimum tool.</p>	<p>CNR</p> <p>FMO and Fire Education Specialist</p> <p>FMO and Superintendent</p>

## Public Involvement & Agency Coordination

The National Park Service in cooperation with the Lassen National Forest held seven public meetings to discuss proposed amendments to the Fire Management Plan and gather the public's concerns or issues with the proposal. The meetings took place in February and March of 2001 in the neighboring communities of Chester, Mineral, Susanville, Redding, Chico, Red Bluff, and Old Station, California. A total of 32 citizens participated in the meetings. The major issues and concerns that came from the open house and other public input (e.g. email and written correspondence) were evaluated and sorted. Issues determined to be significant were those related to the effects of the proposed action, and those not already adequately addressed by laws, regulations, and policies. Significant issues were used in developing and evaluating the alternatives to the Proposed Action discussed in the EA. Public response to the Proposed Action included the following concerns: "chainsaws and other mechanized devices are contrary to the whole wilderness concept." Also, "fire management goals such as community protection should be achieved by management activities occurring outside of wilderness." These concerns were restated into one significant issue: the park's program for fire management should minimize impacts to wilderness values.

Due to the loss of key personnel in 2001 and 2002, the project was put on hold. Once new personnel were brought on, scoping resumed with a press release on June 25, 2003. Articles appeared in the *Red Bluff Daily News* and the *Redding Record Searchlight* as a result of this press release. Further, an inter-agency scoping meeting was held at the park on March 20, 2003.

The environmental assessment was made available for public review and comment during a 30-day period ending February 5, 2005. The document was mailed to 245 organizations, businesses, individuals, tribes, and government agencies as well as 8 libraries in neighboring communities. The document was also made available for viewing and downloading on the park website. In addition, press releases were used to inform the interested public of its availability. The *Red Bluff Daily News*, *Redding Record Searchlight*, *Chester Progressive*, and *Ridge Rider News* all printed articles announcing the release of the EA and the press release was posted on the park's website. The comment period of 30 days meets all federal requirements.

Comment letters were received from the Northern Sierra Air Quality Management District, Shasta County Department of Resource Management, Plumas County Board of Supervisors, Lassen National Forest, California Wilderness Coalition, Lassen County Board of Supervisors, U.S. Fish & Wildlife Service, and two private citizens. The main areas of concern centered around smoke impacts and desired future conditions. There were no new issues or concerns brought up that were not already addressed in the EA. Several of these comments did, however, result in minor changes to the text of the environmental assessment. All recipients of the original EA will be provided an Errata documenting all text edits, corrections, and clarifications made as a result of public comment.

Informal consultation was initiated on March 20, 2003 with the U.S. Fish & Wildlife Service. A letter dated March 2, 2005 was received from them stating that they concurred with our finding that the preferred alternative is not likely to adversely affect Threatened and Endangered Species. They had no other issues, concerns, or stipulations.

A copy of the EA was mailed to Milford Wayne Donaldson at the California State Historic Preservation Office (SHPO) on January 11, 2005. The SHPO was informed that the Fire Management Plan and the accompanying EA will be used to develop future projects and make planning decisions. All projects associated with the Fire Management Plan will undergo Section 106 review on an individual basis as the future projects are planned. The park's dedicated fire archeologist will consult with the SHPO on each of the individual projects and will obtain Section 106 concurrence from the SHPO on each of the projects as they are planned in the future.

Any permits that are determined to be required for the implementation of the Fire Management Plan will be obtained prior to project implementation.

## Conclusion

On the basis of the information contained in the environmental assessment as summarized above, it is the determination of the National Park Service that the proposed Fire Management Plan is not a major Federal action significantly affecting the quality of the human environment. The environmental analysis combined with the ability of the mitigation measures to reduce or eliminate impacts, and giving due consideration of the nature of public response and comments from concurring agencies, lead to this determination. Nor is the proposed action without precedent or similar to one which normally requires an environmental impact statement. Therefore, in compliance with the National Environmental Policy Act, an environmental impact statement will not be prepared. The Fire Management Plan may be implemented as soon as practicable.

**Recommended:** \_\_\_\_\_ Date  
Marilyn H. Parris  
Superintendent, Lassen Volcanic National Park

**Approved:** \_\_\_\_\_ Date  
Jonathan B. Jarvis  
Director, Pacific West Region

Original Signatures for this document are on file at Lassen Volcanic National Park's Natural Resources Division.