

Errata Sheets
Fire Management Plan Environmental Assessment
Lassen Volcanic National Park

This errata sheet must be attached to the Environmental Assessment(EA) to comprise a full and complete record of the environmental analysis for this project. Several substantive comments that did not result in any changes to the EA are addressed as are several substantive comments that did result in minor changes. The EA will not be reprinted.

Comments That Resulted in No Changes:

COMMENT: “One significant impact that is noted in Table 2-9 for the Proposed Action states that there could be ‘prolonged smoke exposure to sensitive receptors.’ Working closely with the local air district on smoke management programs, keeping in prescription and communicating with neighboring air districts will do much to alleviate this unacceptable significant impact. Another noted significant impact is that the state and federal air quality standards and violation of Class I air quality standards could occur. Again, these impacts are unacceptable but can be avoided with proper procedural planning.”

RESPONSE: Table 2-9 is a summary of impact *definitions*. This table gives a reference point for the reader to understand the difference between any actions that are determined to result in minor impacts versus actions that would result in significant impacts. This table does not give the level of impact that would result from the implementation of the alternatives; rather it gives the threshold point that was used in determining the level of impact later on in the chapter. Implementation of the proposed action will not result in any of the impact topics reaching a level of “significant.”

COMMENT: “We question how the National Park Service (NPS) can designate 75% of the LVNP as Wilderness and then utilize mechanical means to manage ‘natural fires’.”

RESPONSE: Congress, not the NPS, designated 78,982 acres of Lassen Volcanic National Park as Wilderness in October, 1972.

Mechanical means, as defined on page 33 of the EA as including larger equipment such as front end loaders, tub grinders, and other large equipment, will **not** be used in Wilderness unless the Superintendent authorizes the use of heavy earth-moving equipment in extreme circumstances in the face of loss of human life and/or property. This is stated clearly in section 2.6.1 of the EA. All *manual* fuel treatments, as defined on page 32 of the EA as hand tools and hand operated power tools, that are proposed in wilderness areas will be reviewed using minimum tool analysis (as stated on page 62 of the EA) and will adhere to the minimum tool requirements of the 1964 Wilderness Act. Furthermore, while analyzing the potential impacts of each of the alternatives in the EA, the park’s interdisciplinary team conducted a Minimum Requirements 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.

COMMENT: “It is expected that the smoke will be kept within the LVNP boundaries, or the fires suppressed.”

RESPONSE: This expectation is not accurate and would not allow for the achievement of most of the goals set forth under this plan. There will be a smoke management plan for every planned fire event that will include mitigation triggers and actions. Furthermore, all federal and state air quality standards will be met with the implementation of the mitigation measures outlined in the EA.

COMMENT: “Monitor weather and fuels – this, and other parts of the Fire Plan are only realistic for fires that can be controlled a week at a time, because the weather cannot be predicted accurately for more than that period. It is of little value to monitor the best time for fire ignition, if it is anticipated to let the fire burn all summer.”

RESPONSE: Weather conditions and forecasts are not only monitored prior to a planned fire event; rather, they are monitored continuously throughout the life of all fires. As stated on page 107 of the environmental assessment, “if weather conditions changed unexpectedly during a prescribed fire and there was a potential for violating air quality standards or for adverse smoke impacts on sensitive receptors, the burn manager would implement a contingency plan, including the option for immediate suppression.”

COMMENT: “There is no way that the fire personnel can minimize smoke pollution in the adjacent communities under the scenario posed on page 57 [of the Fire Management Plan] –Consider long-term burn-out periods for early season burns if management can maintain constant watch on such burns until they pose no threat of escape. This scenario of early season burns also needs to factor in additional funds to watch the burn through the summer.”

RESPONSE: The park respectfully disagrees with this assessment. As stated on page 28 of the EA, “prescribed fire is applied to the landscape...under specified environmental conditions (e.g. weather and fuel moisture); and is confined to a predetermined area with a pre-determined range of fire intensity and rate of spread as documented in an approved prescribed fire plan.” A continual assessment of air quality takes place during any fire event. As stated on page 107 of the EA, “if weather conditions changed unexpectedly during a prescribed fire and there was a potential for violating air quality standards or for adverse smoke impacts on sensitive receptors, the burn manager would implement a contingency plan, including the option for immediate suppression.” Furthermore, all prescribed fires will have a smoke management plan that addresses what actions are to be taken should conditions change that would cause smoke levels to rise above the federal and state standards for air quality.

COMMENT: “Considering that 75% of the LVNP has been designated as Wilderness, how can NPS justify any vegetative manipulation, particularly when it has and will continue to destroy Old Growth timber? For examples, we need only visit the north entrance to the park, Butte Lake, the 2,000 acre Huffer Fire and a large acreage north of Warner Valley along the park entrance to Drakesbad. We understand that a few people appreciate this ‘natural phenomenon’. However, if so why is there a need for rehabilitation of the areas, as suggested on page 54?” [of the Fire Management Plan]

RESPONSE: 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. Many plant species are actually dependent on fire for their survival (for example trees with semi-serotinous cones which are more capable of releasing their seeds after a fire has taken place). Fire within the Lassen Volcanic National Park Wilderness is necessary for the health of the forest. As stated on page 129, section 3.12.2.4: “Fire management activities would affect wilderness resources in generally beneficial ways, through actions that would maintain plant communities within their natural range of

variability, and thus maintain wilderness values, especially in the Wildland Fire Use Fire Management Unit. All alternatives would have minor, short term, localized, and temporary effects on the wilderness that are mitigated through the use of a minimum tool assessment and minimum impact tactics. This mitigation would prevent impairment and preserve wilderness resources and values.” During fire management activities, trees of all age classes will experience some level of mortality. This is a natural process and falls within the objectives of managing wilderness. The process of natural vegetation recovery and re-sprouting will be seen as early as the summer season following the fire event.

Rehabilitation is a routine part of any fire management activity. Even using strict minimum impact tactics, the management of a fire requires some manipulation of control lines to maintain control of the fire as well as maintain firefighter safety. Management has an obligation to rehabilitate areas that were impacted by actions needed to manage a fire. These actions can include felling dangerous dead trees, removing brush, or digging a handline to mineral soil.

COMMENT: “It is difficult to perceive the public acceptance of a 10-year, annual 2,000-acre burning of the LVNP. We want to see the continued 400,000 annual visitors. Therefore, we believe that it will be worthwhile to conduct a survey to determine if ‘You Burn It---They Will Come.’ Neither the smoke, nor the charred, stark remnants of trees at three of the four park entrances can be marketed as a desirable tourist commodity.”

RESPONSE: The National Park Service, as stated in the 1916 Organic Act, and as referenced on page 11 of the EA, states the agency’s purpose: “to promote and regulate the use of national parks in conformance with their fundamental purpose, which is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as would leave them unimpaired for the enjoyment of future generations.” In other words, the park must properly manage its natural and cultural resources now, so that future generations can also enjoy them. Fire management is a resource protection tool that enables park managers to get fuel loads to their natural levels. If this were not undertaken, fuel loads would continue to increase, creating conditions that could eventually produce a catastrophic fire. Preventing such a catastrophic fire is key to protecting the resources for future generations.

The Bluff Fire of 2004 did not result in a decrease in visitation. In fact, visitation numbers were slightly up compared to the same time period the previous year. Also, in 1999 the park conducted an extensive visitor survey as part of the GMP planning process. In this survey two specific questions were asked in regards to the park’s fire management program: 1) were they aware of the prescribed burn policy within the park and 2) would they be willing to tolerate short periods of smoke during their park visit. The survey responses demonstrated that 72 percent of visitors surveyed were aware of our prescribed burn policy and 60 percent stated they would be willing to tolerate short periods of smoke. This seems to indicate that visitors to the area/park will not be driven away by prescribed fires.

COMMENT: “The Environmental Assessment does a good job in explaining how fire will be utilized to create a more fire resilient ecosystem, but I feel emphasis should be placed on how the landscape will appear 10, 20, 50, 100 years into the future. The desired condition and character of the landscape and vegetative communities should be the driving force of the plan. Strong emphasis should be placed on what the desired abundance, mosaic and age classes of the vegetative components should be within the Park and the fuel/fire plan should be the tool utilized to meet the vegetative objects. If the park plans to monitor change over time to make certain the vegetation objectives are being met, the Park needs to establish specific objectives. For example, specific to red fir, what is the desired pattern of vegetation of the landscape and what is the desired range in age classes and seral states.”

RESPONSE: The park staff strongly agrees that all management actions should be guided by measurable objectives and a vision of future landscapes. Describing outcomes is critical to any adaptive approach to managing wildland ecosystems. Desired future conditions may be organized into two broad categories. Many plans included measures of (1) structure (i.e. stem densities, vegetation pattern, size/age distributions) as a way of measuring progress towards program goals. Using structural elements to evaluate program success, assumes significant knowledge of pre-settlement vegetation and the ability to measure change at large spatial scales. An alternative to structure measures is a focus on (2) process. Implementing a repeat pattern of fire, or a fire regime, is another method through which desired future conditions may be achieved. Much is known about the Park's pre-settlement fire regimes and more process-based desired future conditions were selected to guide park staff in selecting where and how to treat portions of the landscape. Progress towards reconstructing these fire regimes is one way the park will be monitoring its effectiveness during the tenure of this planning document.

The use of process driven desired future conditions, often occurs in the context of highly altered ecosystems. Contemporary vegetation within the park boundary varies in its proximity to average properties of structure and composition. Some mid elevation, productive forest types, currently have elevated fuel loads and altered fuel distributions. In these vegetation types prescribed fire is implemented carefully during the restoration phase of burning. Higher elevation forest types appear less altered and capable of benefiting from fire patterns simulating pre-settlement regimes. These forests may be considered in a maintenance phase of burning, in which fire patterns more closely resemble target fire regimes. In all cases, the reintroduction of fire treatments will be approached cautiously with an emphasis on managing fire severity and minimizing negative fire effects.

Fire management actions and the effectiveness of this plan will be continually evaluated and our approach adapted through time. As the program evolves and our understanding of park ecosystems improves, our measures of success may also change. Given our current knowledge of fire in this park's landscape, process-based measures seem the most justified approach to moving plant communities towards a more sustainable and diverse condition.

COMMENT: "A miscalculation during fire season could result in the establishment of a large unnatural landscape that could take well over a hundred years to develop back into the desired landscape. It's easier to mold the present landscape than to start over from bare ground. The 'effects section' of the EA did not really address this situation, and it could be argued that the effects of wildfire are understated."

RESPONSE: Given the nature of wildland fires, all alternatives evaluated have potential for unwanted fire effects. The proposed alternative provides the most effective and efficient fire management program to reduce this risk. The combination of mechanical and manual treatments, prescribed fire, wildland fire use and suppression (as described in the preferred alternative) provides the greatest flexibility in restoring and maintaining natural fire regimes within the park. The EA is an assessment of the impacts of the three alternatives, not an assessment of potential impacts should a catastrophic fire take place. Indeed, the three alternatives were assessed for their ability to reduce the potential for such a catastrophic fire.

COMMENT: "I do know that wildfires can be very beneficial to the land without prior fuel reduction activities, but these fires generally occur during early summer or late fall. Mid-summer fires burn intensely and can result in large burns across the landscape. Crowning potential will be more prevalent today and more so in the future in these forest areas that, for the most part, did not evolve and sustain upon such extreme fire behavior witnessed today. Therefore, is pre-entry fuels management in these forests prior to natural prescribed fire implementation a priority? And, is it even feasible to manage those fuels throughout the park?"

“I do have a concern that the present plan relies too heavily on the use of wildfire at this time before fuel reduction activities are completed. Allowing uncontrolled wildfire (I would place the Bluff fire in this category when it was burning in September) will not establish those vegetative conditions that existed prior to settlement, simply because present wildfires are quite different than the ‘natural’ pre-settlement fires. They burn more intensely and in my mind will modify the environment to a greater degree than those fires that once burned in the forests. Many wind-driven, mid-summer fires that burn on the Plumas burn intensely, destroying much or all of the vegetation on site. These potentially large expansive fires should be avoided in the Park. Instead I would recommend an intensive underburning program be developed that would treat the fuels prior to the use of wildfire.”

RESPONSE: The Park has recently completed a Geographic Information System (GIS) analysis to assess the ecological need of fire restoration in the various vegetation types within the park. This analysis produced a Fire Return Interval Departure (FRID) map which shows managers spatially how far off various vegetation types are from their pre-settlement fire return intervals. This information is then used as a tool to determine which areas are in need of fire restoration versus areas needing maintenance.

Generally, the areas with the greatest need are targeted for prescribed burning or WFU in times of the year or in conditions that will produce low to moderate intensity burning. In areas of the park that are not too far off from historic conditions these treatments can be applied at higher intensities. Many areas of the park *require* high intensity fire to achieve desired results.

The Bluff Wildland Fire Use fire of 2004 is an excellent example of a fire that burned at varying intensities. The fire started early in July and spent a month growing to just 10 acres, slowly creeping at low intensities burning litter and duff. Over the following month, the fire grew to 100 acres, mostly burning at very low intensities as well. At the beginning of September, the weather became hotter and drier, and over the course of two weeks, the fire grew from 100 to 3300 acres, with the largest growth of 800 acres in one day. During those two weeks, the fire mostly burned at moderate to high intensities with the majority of the fire being an underburn. There are also areas where fuels, slope and wind combined to produce higher intensity stand replacing fire. Those two weeks were the hottest and driest of the entire summer, and the Bluff Fire *needed* those conditions in order to produce the excellent fire effect seen on the fire. The fire produced a true mosaic of desired fire effects with an underburn that burned away litter and duff and small areas where crown fire opened up the thick canopy. The fire was finally declared out at 3414 acres at the end of October.

COMMENT: “If NPS is supporting the use of natural fires to meet their goals, how can there be a fire that causes ‘unnaturally severe effects...?’”

RESPONSE: The Park has developed the proposed alternative to provide managers maximum flexibility in managing wildland fire use. This flexibility allows managers more opportunities to minimize the risk of unwanted fire effects during such events. The possibility does exist, however, that due to unnaturally high fuel loading, stand overstocking, or ladder fuels, that unwanted fire effects could occur. The phrase “unnaturally severe effects” was used in the context of planning ahead for possible rehabilitation efforts should the need arise.

Comments That Resulted in Changes to the EA

COMMENT: “As required under Title 17 and many local air district smoke management programs, a smoke management plan is required for all prescribed fires. Although it is discussed under a later chapter

(3.6) in more detail, please include a brief discussion of the development, review, and subsequent approval of Smoke Management Plans with the corresponding air district(s) in this section.”

RESPONSE: Page 28, Section 2.2.2 “Prescribed Fire” now has an additional paragraph that reads:

A prescribed fire burn plan approved by the park Superintendent and a Smoke Management Plan approved by the appropriate Air District must be in place prior to implementing a prescribed fire.

COMMENT: “Apparently no fuels inventory currently exists for the park.”

RESPONSE: During a National Level review of the park’s fire program following the 1997 Huffer fire, a recommendation was made to improve fuels data that is used for modeling fire behavior. This recommendation was followed up by a four year endeavor to complete this task. The new fuels data was gathered by analyzing satellite data, and aerial photographs, and ground truthing by installing vegetation plots throughout the park. During the fall of 2004, this fuels inventory information was further refined and made available for use in FARSITE, a fire modeling software system as well as Fire Program Analysis, a new multi-agency budgeting program.

In addition to the park-wide fuels inventory, the park also gathers project specific fuels data in a standardized fire monitoring program outlined in the National Park Service’s Fire Monitoring Handbook. This is a long term fuels and fire effects monitoring program.

The park’s Resource Management Plan was used as a reference in the FMP. Since the release of the Resource Management Plan (1999), the park has, indeed, completed a very detailed fuels inventory. The inclusion of this existing fuels inventory data was inadvertently omitted from the FMP. “Conduct Forest Fuels Inventory” has been removed from the list of research needs on page 84, section 7.3 of the FMP.

COMMENT: “The Impact Topic of air quality only discusses the Federal Clean Air Act. However, the California Clean Air Act, Title 17, the California Health and Safety Code and local air district smoke management programs also apply and should be included.” This comment was submitted by two agencies. Another commenter simply stated that they felt the “EA did not adequately address the impact of smoke.”

RESPONSE: This language was inadvertently omitted from the environmental assessment. Page 104, paragraph 2, now reads:

California Air Quality Standards must be met during all prescribed fire and wildland fire use activities. California Air Quality standards are more stringent than the National Ambient Air Quality Standards (NAAQS). A comparison of applicable examples is as follows:

| Pollutant | California Standard | Federal Standard (NAAQS) |
|-------------------------|---|---|
| Ozone | 0.09 ppm for 1 hour 0.07 ppm for 8 hours | 0.12 ppm for 1 hour 0.08 ppm for 8 hours |
| Particulate Matter PM10 | 50 Micrograms/m ³ | 150 Micrograms/m ³ |

Page 22, Table 1-1, Third Column, (Air Quality) row now reads: Federal Clean Air Act (CAA); CAA Amendments of 1990; California Air Quality Standards; NPS Management Policies.

Page 55, Table 2-9, third column, fourth row (Air Quality) now reads: Violation of state or federal air quality standards; violation of Class I air quality standards; prolonged smoke exposure to sensitive receptors; or considerable smoke levels, current or predicted, in sensitive areas.

COMMENT: “Based on experience during the Bluff WFU in 2004, the District’s [Shasta County] view is that significant impacts can occur when smoke levels are well below that of a violation of state air quality standards. The point being, if the current definition of ‘significant’ impact is used as the trigger point for smoke mitigation measures, it will be too late to prevent significant impacts to sensitive receptors.”

RESPONSE: The park agrees with the District’s definition of significant which is “A Violation of state or federal air quality standards; violation of Class 1 air quality standards; prolonged smoke exposure to sensitive receptors; or significant smoke levels, current or predicted, in sensitive areas.” The changes listed above address this comment.

COMMENT: “The Bluff Fire was a lightning-strike wildfire which was approved by the Park to continue as a Wildland Fire Use. . . . Once Park officials were informed of the impacts occurring on nearby residents in Plumas County, the Park managed to alleviate further smoke impacts due to the application of mitigations. . . . The above incident relates the importance of the timely development of a Smoke Management Plan according to Title 17 Requirements once a wildfire is managed as a WFU. Development of an SMP which outlines triggers, mitigations, public education, meteorological considerations and is reviewed and commented on by neighboring air districts will proactively prevent future unhealthy smoke impacts on neighboring communities, particularly those residents with sensitive respiratory or cardiac conditions.” A second commenter stated that the park should also include discussion pertaining to the use of the Wildland Fire Use Coordination and Communication Protocol adopted in June 2004 when referring to California’s Smoke Management Program on page 106.

RESPONSE: Page 28, Section 2.2.3 “Wildland Fire Use”. The following paragraph has been added:

For all wildland fire use incidents, the *Wildland Fire Use Coordination and Communication Protocol* will be utilized to manage and coordinate smoke/emissions between the park and the Air Districts. This Protocol aids in the development of mitigation measures before smoke/emissions become a concern. The Air Districts will provide information regarding air quality based on trigger points that should be used to implement smoke/emissions mitigation measures. The park and the Air Districts will plan mitigation efforts well in advance of their needed use. In order to ensure that emissions can be minimized safely and cost effectively prior to the occurrence of substantial smoke/emission impacts, actions need to be planned early in the WFU management process. The processes included in the Protocol provide an agreed upon framework for the coordination process, which can be amended by the Air Districts and the park based on local needs.

COMMENT: “Although it is discussed that mitigation measures are ‘prescribed to prevent and/or mitigate adverse environmental impacts that may occur from fire management activities’, there is virtually no discussion of air quality mitigations to alleviate unhealthy smoke impacts on nearby residents.”

RESPONSE: The outlining of mitigations for smoke impacts was inadvertently omitted from the mitigations section that starts on page 56. A new section (2.6.7) has been added to the mitigations on page 62 which reads: 2.6.7 Air Quality

- 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.
- The park will comply with all Local, State, and Federal Air Quality rules and regulations.
- 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 hoses or helicopters.
- The park must obtain a burn permit prior to prescribed fires.
- Affects to Air Quality are considered as a part of the WFU go/no-go decision.

COMMENT: Two individuals made several comments each regarding the use of the term “public safety” versus “public health”. One individual suggested multiple places within the Fire Management Plan where he thought “threat to human lives” should be amended to read “threat to human lives and public health.”

RESPONSE: The park fully acknowledges its responsibility to protect human health as well as life and property in all endeavors while managing its lands. In all instances mentioned in this comment, the protection of human health as it relates to air quality is built into the State and Federal Air Quality rules and regulations that the park is required to follow. Furthermore, each specific wildland fire use or prescribed fire project must have a Smoke Management Plan completed by the park and approved by Air District personnel which list specific smoke mitigation measures to protect public health.

In order to make clear within the EA that the park includes the threat to public health within its definition of threats to human lives, the following sentence has been added to the EA on page 26, section 2.1: Threat to Human Lives- anything that would result in the loss of human life or would result in the park not meeting federal and state requirements for health and human safety.

COMMENT: “I am concerned about wildfire within the viewsheds and from lakes, which are frequented often by the public, such as Juniper. They are unique values. Also I could go on at length about they effects of wildfire and prescribed burns within riparian areas along ephemeral, intermittent and perennial streams and lakes. They need to be adequately protected during underburning.”

RESPONSE: For clarification purposes, the following paragraph has been added to Section 3.2.1 on page 74 Of the EA:

Riparian systems, embedded within a matrix of communities experiencing frequent fire, are also likely to burn on some regular periodicity (Thornburgh 1995). Although fire regimes may differ from upland vegetation and fire return intervals may be considerably longer, riparian communities within the park have a demonstrated history of reoccurring fire events. As a result, these communities are not as fire sensitive as once thought and have played a critical role in landscape fire regimes (Skinner and Chang 1996, Skinner 2002 , Taylor and Skinner 1998). Like in any community, fires of inappropriate severity can result in negative impacts. Prescribed fire treatments will be managed to minimize fire impacts, carefully considering seasonality, frequency and severity. Excluding fire from these vegetation types may only increase the magnitude of unplanned events and lengthen the post-fire period of recovery.

The following citations have been added to the “References Cited” section which starts on page 134 of the EA.

Skinner, C. N. 2002. Fire history in riparian reserves of the Klamath Mountains. Association for Fire Ecology Miscellaneous Publication 1: 164-169.

Skinner, C. N., and C. Chang. 1996. Fire regimes, past and present. Pages 1041-1069 in Sierra Nevada Ecosystem Project: Final report to Congress. Volume II: Assessments and scientific basis for management options. Centers for Water and Wildland Resources, University of California, Davis, Water Resources Center Report No. 37.

Taylor, A. H., and C. N. Skinner. 1998. Fire history and landscape dynamics in a late-successional reserve in the Klamath Mountains, California, USA. *Forest Ecology and Management* 111:285-301.

Thornburgh, D. A. 1995. The natural role of fire in the Marble Mountain Wilderness. Pages 273-274 in J. K. Brown, R. W. Mutch, C. W. Spoon and R. H. Wakimoto, editors. *Proceedings: Symposium on fire in wilderness and park management*. USDA Forest Service, Intermountain Research Station, Ogden, UT, General Technical Report INT-GTR-320.