

# FINDING OF NO SIGNIFICANT IMPACT

## WEED MANAGEMENT PLAN LASSEN VOLCANIC NATIONAL PARK

May 2008

### Introduction

The increase in distribution and dominance of exotic plant species has led to competition with native plant species and the disruption of ecological systems. In the 2006 NPS Management policies, exotic species are defined as "those species that occupy or could occupy park lands directly or indirectly as the result of deliberate or accidental human activities. . . Because an exotic species did not evolve in concert with the species native to the place, the exotic species is not a natural component of the natural ecosystem at that place. Genetically modified organisms exist solely due to human activities and therefore are managed as exotic species in parks."

Lassen Volcanic National Park (LVNP) proposes to implement a plan to manage invasive (weedy) exotic plants within the Park boundaries. Although LVNP has a relatively low number of exotic species compared to other National Parks in California, most infested sites are in habitats with very high native biological diversity (riparian areas and meadows) and there is considerable potential for further spread. LVNP is in an opportunistic management position to be proactive and prevent larger infestations from occurring and reducing the risk of new invasions.

An ecological assessment that was completed in 2007 found that a total of 59 exotic species occur within the Park or immediately adjacent to the Park such that they posed a threat of spreading into it (Klinger 2007). This list includes four species which do not currently exist within the Park but have a high potential for spread and are anticipated to be a potential problem in the future. These include squarrose knapweed (*Centaurea virgata*) found near Old Station, spotted knapweed (*Centaurea stoebe*) near Lake Almanor, Scotch broom (moving up from foothills), and yellow star thistle (Hwy 89 and 36 outside of Park). Currently, several invasive species are targeted for management in the Park. Bull thistle (*Cirsium vulgare*) and woolly mullein (*Verbascum thapsus*) are the two most widespread weeds in the Park. Intermediate wheatgrass (*Elytrigia intermedia ssp. intermedia*) and smooth brome (*Bromus inermis*) are found in the southwest corner of the Park near the old ski slope. These 4 species are the main targets of the Park's current weed treatment activities. In addition, oxeye daisy (*Leucanthemum vulgare*), dalmatian toadflax (*Linaria genistifolia ssp. dalmatica*), St. John's Wort (*Hypericum perforatum*), foxglove (*Digitalis purpurea*), and chicory (*Chicorium intybus*) are targets of treatment efforts at the Park headquarters in Mineral. Yellow salsify (*Tragopogon dubium*) is widely distributed but not abundant in disturbed areas. Other exotic species such as dandelion (*Taraxacum officinale*) and self-heal (*Prunella vulgaris*) are found in moist or disturbed areas of the Park, but are not currently targeted for treatment. Surveys in 2003 found a population of five Canada thistle (*Cirsium arvense*) on the west shore of Snag Lake, but a repeated survey in 2005 discovered no plants. Canada thistle is also found in the sewage mounds area near the southwest Park entrance. A stray Himalayan Blackberry (*Rubus armeniacus*) is being targeted at headquarters, Terminal Geyser, and Manzanita Lake. Reed canary grass (*Phalaris arundinacea*) and tall wheatgrass (*Elytrigia elongata*) were found at the Warner Valley horse corral, but their status as weeds in California is unclear. Cheatgrass (*Bromus tectorum*) was mapped in 2005 on the edge of Butte Lake and at the Manzanita Lake ranger station.

## Purpose and Need

The purpose of The Lassen Volcanic National Park Weed Management Plan (LVNP WMP) is to:

- Decrease weed plant cover and increase native plant cover
- Document and standardize best management practices to more effectively meet goals and objectives
- Provide options or tools to managers in reducing the threat to natural and cultural resources
- Use monitoring to more effectively implement and adapt management practices
- Determine the minimum tool/treatment or combinations of treatments that support Wilderness Values to restore functioning native plant communities
- Develop a document that will meet required federal and state environmental compliance
- Develop a document will provide future direction for weed-related projects that fall under its scope
- Restore native plant communities and wildlife habitat to reduce the park resources dedicated to weed removal.

Existing conditions that should be changed:

Exotic plants threaten natural and cultural resources, including cultural landscapes and wilderness, within the park and there is no planning document in place to guide their management.

Control of invasive weeds within wilderness is needed in order to preserve and restore the characteristics that are vital to the wilderness experience.

Problems that should be remedied:

Resource managers need to be able to select and implement the most appropriate management tools in the future.

Decisions that should be made:

A comprehensive evaluation of potential impacts associated with exotic plant management is needed to determine the appropriate methods of weed management for LVNP.

Standardized survey, treatment, and monitoring methods need to be determined and implemented.

A standardized decision-making process is needed so that management decisions can be easily communicated and explained to the public.

Policies or mandates that should be implemented:

A WMP is needed to ensure that relevant policies and mandates are implemented (see Chapters 1.3, 1.4, 1.5, and 2.1 of this document for further discussion about policies and mandates).

## Selected Alternative

Under the selected alternative, which is the same as the preferred alternative as was presented in the EA with no modifications based on either public comment or agency coordination, the National Park Service will take actions that will achieve the desired future conditions identified in the plan.

The selected alternative includes the following strategies:

**Prevent** the introduction and spread of invasive weedy plants through public education and proactive management.

**Survey** and map weedy vegetation and assess its potential for invasiveness and ecological displacement as an early-detection tool.

**Treat** infested areas using the most effective tools with minimum impact.

**Monitor** populations and treatment areas to gauge program effectiveness.

**Adapt** management strategies based on monitoring results.

**Best Management Practices** guidelines for park operations to follow to ensure that all of the above strategies have the maximum potential for success.

The following is a more in-depth look at each of the above listed strategies:

### *Prevention*

Prevention measures include general weed education for both employees and visitors through bulletin boards and presentations. Many people do not understand the importance of weed control or the concept of exotic species. Educational posters and videos are tools to create a forum for discussion. The extra assistance in finding new populations is key to early-detection. In addition, Fire, Maintenance, and Natural Resources Management Divisions each have a copy of *Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species* (USFS 2005) to reduce the transport and introduction by park employees and are encouraged to implement the standards.

Prevention also involves collaboration with other government agencies and non-government organizations (NGOs). Park representatives regularly attend meetings of the four Cooperative Weed Management Areas (Tehama, Shasta, Plumas-Sierra, Lassen WMA). Together, we apply for grants, organize educational tools, and share information with the community by publishing brochures and staffing booths at county fairs.

### *Survey*

Surveys to determine the distribution and abundance of weedy species are focused on developed areas, road corridors, the park boundary and within the watersheds of existing and proposed prescribed burn units. Areas of the Park determined to be most at risk and most sensitive to exotic plant invasions were stratified based on existing knowledge of weed locations, the physical characteristics of the Park, the biological requirements of high priority exotic species, the biological diversity of different habitats potentially at risk, distance to developments (e.g., roads and campgrounds), and recent disturbance history (e.g., fires and floods).

A survey is performed by walking in a regular grid pattern over an area such that any weed species will be noticed. The distance at which two members of a survey crew are separated from each other varies from about 5m to 50m depending on the visibility through the vegetation. Potentially suitable habitat, such as, areas that are moist or disturbed, are surveyed more closely. When an infestation is found, the species, number of plants and percentage of reproductive plants are noted. The location and extent of each infestation is recorded by a GPS unit and entered into the Weed Information Management System (WIMS) database. Survey protocol is detailed in the *Protocol for weed survey, treatment, and monitoring in Lassen Volcanic National Park* (LVNP 2006) in Appendix 8.4.

Collaboration and cooperation with surrounding landowners is also important. Park staff is in constant contact with other WMA participants regarding new and moving infestations. For example, the Redding East Noxious Weed District Biologist from the California Department of Food and Agriculture (CDFA) surveyed the main park road and adjacent roads on Forest Service and private land north of the Park for spotted knapweed (*Centaurea stoebe*). CDFA also provides periodic updates on weed locations along highways. In addition, the Lassen Special Weeds Action Team (SWAT) from the Lassen Cooperative WMA donates a 3-person crew to assist park staff with surveying proposed burn units (LCSWAT 2006).

### *Treat*

Weed treatment is one component of overall site management and restoration program. Rather than focusing on each individual species, the program focuses on long-term goals and objectives for the plant community and wildlife habitat. The objectives of implementing this strategy are:

- (1) keep sites free of species that are not yet established but may be pests in adjacent properties;
- (2) set priorities for the treatment of weeds that have already established on the site, according to the best literature and technical expertise;
- (3) set conservation targets that will restore native plant communities and wildlife habitat;
- (4) create an adaptive management plan that will take into consideration monitoring data and be modified accordingly.

Four kinds of treatments will be used under the selected alternative:

#### **1. No treatment**

Species of low priority may not be treated immediately based on its invasiveness.

#### **2. Cultural Treatments**

Cultural treatments are practices that promote the growth of desirable plants and reduce the opportunities for exotic plants to grow. Examples include prevention, irrigation, prescribed fire, and seeding of native plant species.

#### **3. Mechanical/Manual Treatments**

These treatments cause physical damage to or removal of part or all of the plant. Examples of these treatments include hand pulling, cutting, grubbing, haying and mowing. The minimum tools approach will be utilized for the mechanical and manual treatments. Minimum tools could include pick mattocks, clippers, Japanese farmer's knives, Pulaski's, shovels and weed wrenches for more shrub-like weeds.

Manual removal of target plant species is mostly practiced due to the relatively low density of many infestations and the minimal impact on the surrounding vegetation; however, each treatment is discussed for highlighted weeds in the EA, Appendix 8.5. The location and extent of each treatment is recorded by and entered into the Weed Information Management System (WIMS) database. Treatment for each protocol is detailed in the *Protocol for weed survey, treatment, and monitoring in Lassen Volcanic National Park* (LVNP 2006) and in Appendix 8.4 of the EA. Site prioritization is made following field reviews by the ecologist to assess site specific plant phenology, soil moisture, and logistic constraints.

#### **4. Chemical Treatments**

Chemical treatments include applying herbicides as prescribed by their labels and herbicide use protocol (Appendix 8.8 of the EA), using a variety of application methods. Determining the right

course of action in weed management can be difficult; there are many tools and techniques available, all with pros and cons. The decision to use herbicides is often a calculated risk which is not to be taken lightly. Knowing when to begin management action is the key to catching an infestation before successful control becomes unfeasible. As with medicine, herbicides must be used judiciously to be safe and effective. Herbicides are any chemical substance that is used specifically to kill, prevent, repel, destroy, or mitigate a plant. Modern systemic herbicides are frequently used to control invasive plants. Many of the modern herbicides that are used in natural areas target specific plant processes or pathways and are relatively harmless to the environment. They are applied to the aboveground part of the plant and are transported throughout the plant to the root system. Selective application methods include foliar spray or wicking, cut stump applications, and basal bark applications to standing shrubs and thin-barked trees. Each technique is designed to minimize the amount of herbicide used as well as the risk of damage to non-target plants. No use of aerial applications for chemical treatments will occur.

Currently, parks must obtain approval from the Regional or National Integrated Pest Management (IPM) Coordinator before using pesticides. This process helps ensure that the appropriate pesticides are used in the appropriate areas. For example, a Regional IPM Coordinator will not approve the use of pesticides that do not have an aquatic label in areas located in or adjacent to water. Parks are also required to use pesticides in accordance with label guidelines.

Prior to herbicide application, assessing the target species, seasonal timing of the application, the presence of desirable species and communities, accessibility for the applicator and equipment, soil types, weather conditions, location of surface water, depth to groundwater, and the site's sensitivity to trampling from herbicide application will be considered. The Relative Aquifer Vulnerability Evaluation (RAVE) model is one method of evaluating the impacts of herbicide application to water resources (Appendix 8.9 of the EA). To determine the potential for ground water contamination, the RAVE system considers several factors: irrigation practice, depth to ground water, distance to surface water, percent organic matter, pesticide application frequency, pesticide application method, pesticide leachability, and topographic position. Values are assigned to each of these factors and then totaled. The total value is then compared to a "scorecard interpretation scale" to determine the potential for ground water contamination by an individual pesticide. Higher scores indicate a higher vulnerability of ground water to pesticide application. If a pesticide is determined to have a high potential for ground water contamination, an alternative pesticide or alternative application method is selected and results are compared. The alternative that has the lowest potential for ground water contamination and that has an acceptable score is then selected.

Only those pesticides that have been registered by the USEPA and CalEPA will be used. In natural areas, herbicides are selected based on their effectiveness against the target weed. Preference will be given to herbicides that are unlikely to move offsite through the air or water, non-toxic to people and other organisms, not persistent in the environment and relatively easy to apply. In some circumstances, however, a single application of a more toxic or persistent chemical that eradicates a weed may be preferable to repeated applications of a safer product which removes a smaller percentage of the total number of invasive plants but results in a larger total application of herbicide. A balance will be struck between the strength or effectiveness of the product and the total negative impact to the environment. The information used to make these decisions comes from the herbicide labeling, experienced land managers, herbicide dealers, and other experts. Recommended treatments for targeted species are outlined in Appendix 8.5 of the EA.

An adjuvant is a substance added to a pesticide to aid its action, but has no pesticide action by itself. Some pesticides require the addition of an adjuvant to work effectively. Surfactants are adjuvants used in conjunction with pesticides to increase absorption. A surfactant is a surface-active ingredient that lowers surface tension of the solvent in which it is dissolved or the tension between two immiscible liquids. Safety procedures and MSDSs will be kept on site for all adjuvants used under the LVNP WMP.

Once a pesticide has been selected, the resource manager will submit a pesticide use request using the Intranet-based IPM System. In general, the Regional IPM Coordinator will be responsible for reviewing and approving proposed pesticide uses. However, review and approval from a National IPM Coordinator will be required for pesticide uses that involve: aquatic applications or situations in which the applied pesticide could reasonably be expected to get into waters or wetlands.

## 5. Fire Treatments

One method of fire treatment that has been in use for over 50 years is wilting. Wilting is a method of killing weeds with a brief application of heat (about 900°C). Plants are not actually burned with this technique, but heated with a flame produced by a propane torch. Effective wilting is based on heating the plant just enough to destroy cell structure in the plant leaf so the weed will no longer put energy towards growth. Wilting is most effective when weeds are young. See Appendix 8.10 of the EA for the protocol.

Several sizes of hand-held propane torches (spot-burners) and tractor mounted burners are available. With the right size of nozzle or head, some heat applicators can also be used to target weeds selectively in a heterogeneous native/non-native community.

High temperatures tear apart plant cells and destroy proteins in the cells. It is only necessary to heat the leaf long enough to destroy the waxy cuticle of the leaf and disrupt the cells. Torching or boiling the plants until damage can be seen immediately is unnecessary and may stimulate re-growth of some established perennials such as morning glory (*Convolvulus* spp.). Effects of heating may be visible in as little as an hour or take up to several days to show.

Seedlings, annuals, young perennials and germinating seeds are most susceptible to heat damage. They are usually killed by a single treatment. None of the heat treatments penetrate into the soil or below a layer of gravel, therefore they do not kill the roots of established perennials. Perennials may require three or more treatments in a season to deplete the roots and kill the plant. Careful commitment of resources to monitor and retreat must be integrated into the annual planning efforts.

Broadleaf weeds are more easily damaged by heat than grasses are. The growing tips of grasses are encased in a heat resistant sheath, which makes it possible to selectively control weeds in turf using a spot-burner.

The 2005 LVNP Fire Management Plan (FMP) includes Best Management Practices for preventing an increase in the number of weeds in a known weed area and/or an increase in the size of the area in which they occur. Mitigation Measures in the FMP require burn units be surveyed for weeds before the units are managed with fire.

New species and new treatments will need to be addressed on a case-by-case basis. The Decision-making Tool, adapted from the 2005 Northern Great Plains Exotic Plant Management Plan and Environmental Assessment, guides land managers in determining the most appropriate treatment (Appendix 8.7 of the EA). As the need for herbicides not listed in this EA arise, a Pesticide Use Proposal (PUP) will be submitted to the Regional Integrated Pest Management Office for approval.

## *Monitor*

Monitoring can be a cost-effective tool to detect early stages of encroachment, track species distribution, and gauge the success of removal methods.

The comprehensive monitoring plan in the selected alternative includes the following:

- Monitoring the occurrence and spread of exotic plant species in high risk areas
- Monitoring the effectiveness of yearly treatments

- Installing permanent plots to collect baseline long-term data on the distribution and composition of exotic species and native plant communities. Pre- and post-treatment data is collected on species composition, density, cover, and the regeneration characteristics of both exotic and native plants. Seasonal crews assist the seasonal botanist in the installation and initial measurement of permanent monitoring plots mentioned above.
- Developing a broader series of permanent photo plots for monitoring general plant successional patterns in each area. These photos provide an extensive qualitative baseline reference to assess pre- and post-treatment conditions, and complement the quantitative monitoring efforts described above.
- Use biotic and abiotic characteristics of each site to evaluate the likelihood of infestations in areas that have not been surveyed and to re-evaluate the risk assessment model currently in place.
- House records in one relational GIS database (programming is maintained by The Nature Conservancy) called the Weed Management Information System (WIMS).
- Provide detailed, step-by-step directions on the monitoring protocol (Appendix 8.4 and 8.6 of the EA).

### *Adaptive Management*

LVNP will use an adaptive management strategy. First, we establish and record the goals for the site. Second, we identify species that block us from reaching these goals and assign them priorities based on the severity of their impacts. Third, we consider methods for controlling them or otherwise diminishing their impacts and, if necessary, re-order priorities based on likely impacts on target and non-target species. Fourth, we develop weed control plans based on this information. Fifth, the plan is implemented, and results of our management actions monitored. Sixth, we evaluate the effectiveness of our methods in light of the site goals, and use this information to modify and improve control priorities, methods and plans. Finally, we start the cycle again by establishing new/modified goals (Appendix 8.4 and 8.7 of the EA).

### *Best Management Practices*

The Best Management Practices (BMPs) are guidelines for Park operations, including, fire, maintenance, and patrol to follow in order to most successfully implement this plan (Appendix 8.11 of the EA). Prevention is the most cost-effective and successful tool in weed management and more effective methods of prevention are urgently needed so introductions will not exacerbate the economic and resource burden. LVNP will be implementing guidelines developed by the Working Together Against Weeds Workgroup (an interdisciplinary group of National Park Service staff from the Pacific West Region).

## **Alternatives Considered**

The EA identified and evaluated two alternatives: a no-action alternative and the preferred alternative (described above). The no-action alternative was similar to the selected alternative but it did not include the following:

1. Chemical Treatments;
2. Fire Treatments (wilting);
3. A set process for determining the strategies, treatments, and prioritization of species in the future if new exotic species are discovered; and
4. Best Management Practices.

## Environmentally Preferred Alternative

In accordance with Director's Order-12, *Conservation Planning, Environmental Impact Analysis, and Decision-making*, the NPS is required to identify the "environmentally preferred alternative" in all environmental documents. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA) of 1969, which is guided by the Council on Environmental Quality (CEQ). The CEQ (46 FR 18026 - 46 FR 18038) provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101", which considers

- fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
- assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
- achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA Section 101(b)).

Generally, these criteria mean the environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038).

As described in this Environmental Assessment, the selected alternative is also the environmentally preferred alternative. The selected alternative increases the effectiveness of the treatments; therefore, it reduces the staff and volunteer hours spent repeatedly disturbing soils, plants, and animals over a long time period in a concentrated area. The selected alternative achieves the greatest balance between providing the necessary weed removal and protecting all of the park's resources.

## Why the Selected Alternative Will Not Have a Significant Effect on the Human Environment

In evaluating the Preferred Alternative in the EA, NPS decision makers considered the NEPA Regulations criteria for significance and this section presents the results of the assessment, which do not appreciably differ for the selected alternative.

The following impact topics were not assessed in the EA because they either will not be affected or will be affected negligibly: prime and unique farmlands, air quality, floodplains, geologic/geothermal resources, historic structures, cultural landscapes, ethnographic resources, and environmental justice.

The impact topics that were evaluated in the EA were soils, water resources, wetlands, vegetation, wildlife, special status species, archeology, visitor experience, park operations, and wilderness values.



## Soils

Surveying and monitoring areas for weeds could result in negligible levels of soil disturbance due to the footprints left by those conducting the surveys. Treatments, on the other hand can result in the following impacts:

1. Restoration activities, such as reseeded, could cause temporary disturbance to soil. Effects could include compaction of soil and disturbance to upper soil profiles. The effects to soil may be detectable in some areas. However, these changes will be minor, short-term, and localized.
2. Manual and mechanical treatments could cause a temporary disturbance to soils. Operation of equipment for activities such as physical removal of weeds could result in minor, short-term, adverse effects to soils in local areas.
3. Exotic plant management may have overall long-term beneficial effects from rehabilitating native plant communities, which could reduce the potential for soil erosion and sedimentation in disturbed areas.

Whenever using herbicides, there is a slight potential for accidental spills that could temporarily contaminate soils. Potential adverse impacts of accidental spills will be minor and short-term. Some herbicides have the potential to persist in soils that are fine-textured, which could lead to herbicide buildup in soils. The majority of soils in the Park, however, are rocky and well-draining; therefore, the risk of herbicide build-up as a result of this treatment at the Park is extremely low.

The heat intensity and duration of fire treatments are low enough to have negligible adverse effects on the soil.

The selected alternative will have long-term, negligible to minor, adverse and beneficial effects on soils in the Park.

## Water Resources

The following are the potential impacts from the various proposed treatments:

1. Prevention, reseeded, and irrigation will have a beneficial effect of promoting the reestablishment of native vegetation, which could help reduce erosion and sedimentation in surface waters. Changes in water quality could be beneficial, minor to moderate and long-term on a local level.
2. The potential impacts to water quantity from irrigation will likely be negligible since this treatment will be very rarely used.
3. Minor mechanical disturbance to native plants from tilling or other ground disturbing activity may result in indirect effects, such as increased sedimentation, to surface waters. Adverse impacts will be minor, short-term and localized.

There will be no use of herbicides that do not have an aquatic label in or adjacent to water. Herbicide labels will be strictly followed. Further, the RAVE (Relative Aquifer Vulnerability Evaluation) model to evaluate the risk of ground water contamination in areas where leaching is possible will be utilized. Therefore, while the potential for adverse effects to water resources is slightly higher under the selected alternative, the mitigations that will be put in place will keep the adverse effects at a negligible to minor, short-term level.

The adverse effects of using the wilting tool will be negligible.

The selected alternative will have long-term, minor, adverse effects on water resources in the Park.

## Wetlands

The following are the potential impacts from the various proposed treatments:

1. Prevention, reseeding, and irrigation will have a beneficial effect of promoting the reestablishment of native vegetation, which could help reduce erosion and sedimentation in surface waters. Changes in water quality could be beneficial, minor to moderate and long-term on a local level.
2. The potential impacts to water quantity from irrigation will likely be negligible since this treatment will be very rarely used.
3. Minor mechanical disturbance to native plants from tilling or other ground disturbing activity may result in indirect effects, such as increased sedimentation, to surface waters. Adverse impacts will be minor, short-term and localized.

There will be no use of herbicides that do not have an aquatic label in or adjacent to water. Herbicide labels will be strictly followed. Further, the RAVE (Relative Aquifer Vulnerability Evaluation) model to evaluate the risk of ground water contamination in areas where leaching is possible will be utilized. Therefore, while the potential for adverse effects to water resources is slightly higher under this alternative, the mitigations that will be put in place will keep the adverse effects at a negligible to minor, short-term level.

The adverse effects of using the wilting tool will be negligible.

The selected alternative will have long-term, minor, adverse effects on water resources in the Park.

## Vegetation

Potential impacts to vegetation resources include the following:

1. Intrusion by personnel conducting exotic plant management activities will cause negligible, short-term adverse effects from foot traffic en route to exotic plant populations. Individual plants will be trampled but will result in no long-term effects.
2. Cultural treatments, such as reseeding could have a long-term moderate beneficial effect of promoting the reestablishment of native vegetation in localized areas.
3. Ground disturbance, such as can occur when using hand tools, may cause a minor, short-term adverse effect to individual nearby native plants. However, infrequent impacts to individual plants generally have negligible to minor impacts on plant communities.
4. Non-target native plants subjected to chemical (herbicide) drift could experience no effect, reduced vigor, or death depending on the sensitivity of the plant species to the specific herbicide and the dose the plant was subjected to. Overall, use of chemical controls will have infrequent adverse, short-term minor impacts on individual plants. Infrequent impacts to individual plants generally have negligible to minor impacts on plant communities. The impacts of herbicide use on native (non-weed) species will therefore be directly adverse, site-specific, short-term, and negligible to minor. The effect on plant communities from the targeted removal of weed species through chemical use will have a localized beneficial, moderate effect in the long-term.
5. Inherent potential risks when fire as a management tools is negatively impacting non-target species. Proper training and monitoring will eliminate or reduce this risk. Potential adverse impacts of accidentally burning non-target species will be minor and short-term.
6. The level of exotic plant management in the selected alternative will have a moderate, long-term, beneficial effect on plant communities and habitat. This alternative will likely achieve the desired condition for plant communities in a more timely fashion than the no-action alternative.

The selected alternative will have minor short-term adverse effects, but will also provide minor to moderate beneficial effects in the long-term to vegetation in the Park.

### Wildlife

Potential impacts of various treatments on wildlife are described below:

1. Intrusion into habitat by personnel conducting exotic plant management will cause short-term, negligible harassment to wildlife species. There may be some escape flight response from wildlife during these activities, but this will produce negligible, short-term, site-specific adverse impacts in the form of unnecessary energy expenditures.
2. Reseeding and irrigation could have a beneficial effect of promoting the reestablishment of wildlife habitat. The impacts will therefore be beneficial, site-specific, long-term, and minor to moderate.
3. Manual or mechanical treatments could have site-specific adverse impacts on ground nesting birds, burrowing animals, and amphibians or their food source. Best Management Practices will limit these adverse effects to being short-term and negligible.
4. Potential effects of irrigation treatments will likely be negligible on surface water flows since this tool is not often used. Adverse impacts to fisheries will therefore be negligible, site-specific and short-term.
5. Minor mechanical disturbance to native plants from ground disturbing activities may result in slightly increased sedimentation to surface waters which could indirectly result in minor, adverse, site-specific, short-term effects on fisheries.
6. Overall improvements to vegetation communities by removal of the targeted species directly relate to an improvement in wildlife habitat. Therefore, this alternative will have a minor, site-specific, long-term beneficial effect on wildlife.

It is unlikely that terrestrial wildlife species will receive direct exposure to herbicides during application. It is also unlikely that wildlife will be overexposed over time if the herbicides are used according to label specifications. Wildlife species will most likely flee the area or escape to an underground burrow/den upon the arrival of personnel conducting exotic plant management treatments. IPM practices ensure that herbicide accumulation on site will be minimal and persistence is contingent on the specific herbicide. Adverse impacts will be minor, short-term, and site-specific. The reduction in habitat by the removal of exotic species will be negligible and short-term as the native plant community replaces it. In addition, ground and noise disturbance to wildlife will be reduced by the decrease in staff and volunteers hours at the site.

Although aquatic herbicide application is not being considered at this time, it is also unlikely that aquatic wildlife species will receive direct exposure to herbicides during application, and it is unlikely that they will be overexposed if the herbicides are used according to label specifications. Impacts resulting from the use of herbicides will not be expected to have any long-term adverse impacts on native aquatic wildlife species, their habitats, or natural processes sustaining them. The impacts of chemical treatments on aquatic wildlife and fisheries will therefore be direct, site-specific, short-term and negligible.

Negligible impacts to wildlife species are predicted as a result of fire treatments.

The selected alternative will have negligible to minor, short-term, site-specific adverse effects and major long-term beneficial effects on wildlife.

### Special Status Species

There will be no additional impacts (no effect) to special status species under the implementation of the selected alternative. Occurrence and impact information is presented in the Affected Environment section of the EA.

### Prehistoric and Historical Archeology

Many areas within the park have not have been surveyed for presence of archeological resources. The potential for disturbing previously unknown or undiscovered archeological resources exists. A mitigation measure has therefore been created to account for this possibility. Any new areas or areas not previously reviewed for vegetation removal or management shall be reviewed by the Cultural Resources Program Manager prior to any weed removal treatments being undertaken. The Plant Ecologist will contact the Cultural Resources Program Manager in advance of the weed management project to determine if the area is within a known archeological or culturally sensitive area. A strategy to preserve the integrity of the cultural site will be determined at that time. For areas that have been approved by the Cultural Resources Program Manager to have weed management projects undertaken, it is still required that all work stop immediately if any archeological resources are found or uncovered and the Cultural Resources Program Manager shall be contacted immediately.

The selected alternative will have no adverse effect on archeological resources in the Park.

### Visitor experiences

Operation of tools and equipment could have a negligible, short-term adverse effect on visitor experience.

The Park has received some complaints in the past that the presence of exotic species reduces their enjoyment level in the park. The successful implementation of a weed management plan will result in a negligible to moderate beneficial impact on visitor experience, depending on the individual.

Chemical treatments could, on rare occasions, require visitor use closures for visitor protection during herbicide application and while the herbicide dries. Visitor access will also be restricted during wilting treatments for safety purposes. This displacement of visitors will be rare, short-term, and site-specific due to the wide distribution of exotic plants throughout the Park. The health and safety benefits to visitors, however, outweigh the short-term effects of restricting their access. The impacts to visitor use will be directly beneficial and adverse, site-specific, short-term, and minor.

The selected alternative will have negligible to moderate beneficial effects as well as negligible to minor adverse effects on visitor experience in the Park.

### Park Operations

Implementation of a weed management plan will slightly affect park operations. Funding for its implementation will come from a continuation of existing funding used for weed management and construction contracts.

There will likely be a decrease in administrative support for personnel and procurement because of the effectiveness and efficiency of these additional tools. The increase in storage space needs and fuel will be negligible. However, the park already provides these services and can absorb the small

increases associated with continuing the existing weed management program. The adverse impacts on park operations will therefore be short-term and negligible. Implementation of additional Best Management Practices (Appendix 8.11 of the EA) procedures will require park operations to adhere to more stringent practices than in the no-action alternative. The additional time and cost in preventative practices will be offset by the reduction in personnel and equipment costs to treat the weeds.

The selected alternative will have negligible short-term adverse effects as well as negligible long-term beneficial effects.

### Wilderness values

A temporary change in wilderness character and associated values will occur during weed management activities. Some aspects of weed management may be intrusive on the wilderness experience. The presence of park personnel and equipment could impact visitor solitude and self-discovery. However, the removal of weed species could also improve the wilderness experience for those individuals who find that weed species detract from their overall experience. The adverse impacts of weed management on wilderness will be minor and short-term and the beneficial impacts will be moderate and long-term. The plan's objective to restore functioning native plant communities supports Wilderness Values and, in many cases, it is the health of these ecosystems that initially supported wilderness designation.

Herbicide and wilting techniques will be primarily used in non-wilderness areas where previous disturbance is greatest. The infrequent use of herbicides and wilting in wilderness will have minor and short-term adverse effects. The increased effectiveness of the proposed alternative, however, will reduce the repeated, long-term disturbance to visitors, wildlife, and plants by reducing the number of staff and volunteer hours spent removing vegetation by hand.

The selected alternative will have minor and short-term adverse effects as well as minor and long-term beneficial effects.

In addition to the above, there is also no violation of law, no uncertain effects or unique risks, no adverse effect on public health and safety, and no cumulative effects.

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

Based on the potential impacts which could result from the preferred alternative that are documented in the EA, and as 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 result in neither unacceptable impacts nor impairment of resources or values. Furthermore, no uses which may be allowed under the selected plan are inappropriate.

## Measures to Minimize Harm

Impact Topic	Mitigation Measures	Responsibility
Soils	Follow park-specific protocol and, where applicable, herbicide labels.	Plant Ecologist
Water Resources	<p>Follow herbicide label.</p> <p>Conduct Relative Aquifer Vulnerability Evaluation (RAVE) for herbicide to determine site suitability and potential buffer zones.</p> <p>Follow Weed Management and Herbicide Protocols</p>	Plant Ecologist
Wetlands	<p>Follow Weed Management and Herbicide Protocols.</p> <p>Follow herbicide label.</p> <p>Conduct Relative Aquifer Vulnerability Evaluation (RAVE) for herbicide to determine site suitability and potential buffer zones.</p>	Plant Ecologist
Vegetation	Follow Weed Management Protocol for surveying, treatment, and monitoring to track native plant community cover and diversity.	Plant Ecologist
Wildlife	<p>Bald Eagles, California Spotted Owl, American Peregrine Falcon Northern goshawk:</p> <p>Wildlife biologist will be contacted during breeding</p>	Plant Ecologist

	<p>season before entering the site.</p> <p>Cascades frog:</p> <p>Wildlife biologist will be contacted before treatment in the vicinity of designated ponds.</p> <p>Sierra Nevada red fox, Little Willow Flycatcher, Greater Sandhill Crane, Prarie Falcon, Rufous Hummingbird, Vaux’s Swift, American Dipper,</p> <p>Northwestern pond turtle:</p> <p>Wildlife biologist will be contacted immediately upon sighting.</p>	<p>Plant Ecologist</p> <p>Plant Ecologist</p>
Archeology	<p>Any new areas or areas not previously reviewed for vegetation removal or management shall be reviewed by the Cultural Resources Program Manager. The Plant Ecologist will contact the Cultural Resources Program Manager in advance of the management project to determine if the area is within a known archeological or culturally sensitive area. A strategy to preserve the integrity of the cultural site will be determined</p>	<p>Park Archeologist and Plant Ecologist</p>
Visitor Experiences	<p>Follow Weed Management and Herbicide protocols.</p>	<p>Plant Ecologist</p>

Park Operations	Follow Best Management Practices.	Plant Ecologist
Wilderness Values	Conduct Minimum Requirement Analysis.	Plant Ecologist

## Public Involvement & Agency Coordination

Lassen Volcanic National Park conducted both internal scoping with appropriate NPS staff and external scoping with the public and interested and affected groups, agencies, and tribes to determine the range of issues to be discussed in this Environmental Assessment.

A press release initiating the public scoping process and comment period was issued on December 19, 2007 and was also posted on the park's website. Two local newspapers, the *Red Bluff Daily News* and the *Chester Progressive* printed the press release. No public comments were received during the scoping period.

### Native American Indian Tribes

Five tribes are routinely consulted with regarding park proposed actions. These tribes are Greenville Rancheria, Mooretown Rancheria, Redding Rancheria, Pit River Tribe and the Susanville Rancheria. These five tribes were sent letters on January 14, 2008 noting the likely undertaking. One comment letter, dated April 24, 2008, was received from the Susanville Rancheria. The tribe was supportive of the preferred alternative and described it as "sensible and responsible."

### California State Historic Preservation Office

A copy of the EA was mailed to Milford Wayne Donaldson at the California State Historic Preservation Office (SHPO) on April 7, 2008. The SHPO was informed that the Weed Management Plan and the accompanying EA will be used to make planning decisions for the future of Weed Management at LVNP. However, the Weed Management Plan is a park-wide document that focuses on strategies and tools that can be used for weed management and does not focus on specific geographic areas within the park. Because of this, the SHPO would be unable to comment on the potential effects to any particular area. Rather than requesting SHPO concurrence at this time, any new large-scale weed removal projects associated with the Weed Management Plan will be reviewed by the Park's Section 106 coordinator. As future projects are planned and geographic areas can be defined, the Park's Section 106 coordinator will determine if consultation with the SHPO is necessary. All future projects resulting from the Weed Management Plan that the Park's SHPO coordinator determines are in need of SHPO review will undergo Section 106 review with the SHPO at that time.

### U.S. Fish and Wildlife Service

Because there will be no effect on listed or candidate species from the alternatives in this Environmental Assessment, no further Section 7 (Endangered Species Act) consultation with the USFWS is necessary. The Federal Endangered and Threatened Species list (Document # 080114103718) was queried on January 14, 2008 from the Sacramento Field Office website ([http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list.cfm)). A copy of the query can be found at R:\Natural Res Management\Vegetation\Rare Plants>Listed plant\USFWS\_quad\_list\_1\_2008.pdf. A memorandum dated January 15, 2008 documenting the conversation with LVNP's contact person at



USFWS Sacramento Field Office about their decision to not require a concurrence letter and the justification is located in the compliance files for this EA.

This EA was available for a **thirty-day** public review period starting April 7, 2008. At that time, a press release was distributed to local newspapers and the EA was mailed to a list of persons, businesses and agencies that have expressed interest in Lassen Volcanic National Park proposed actions and events. The *Red Bluff Daily News* printed the press release on April 5, 2008. The EA was mailed to local libraries, organizations and individuals that have requested to receive a copy of the EA as well as others who requested copies during the review period. The EA was also available on the park's website, located at <http://www.nps.gov/lavo>.

Printed copies of the EA were direct mailed to approximately 40 environmental groups, 35 government agencies, 11 Tribes, 11 local and state politicians, 33 local businesses 17 Special Use Permit holders, 8 public libraries, and 20 citizens.

Three written comment letters were received. One was a letter of support for the preferred alternative from the Susanville Rancheria, the second was a letter from the Enterprise Rancheria reminding the park of its responsibility for protecting cultural sites and the third was from the Northern Sierra Air Quality Management District agreeing that the preferred alternative was not likely to have significant impacts on air quality so long as LVNP abides by all air quality permitting restrictions in the area.

## 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 project 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. The action will not result in any unacceptable impacts nor will it result in impairment to any park resources. Indeed, the actions are necessary for responsible wilderness stewardship. Therefore, in compliance with the National Environmental Policy Act, an environmental impact statement will not be prepared. The Weed Management Plan may, therefore, be implemented as soon as practicable.

**Recommended:** \_\_\_\_\_  
Darlene M. Koontz  
Superintendent, Lassen Volcanic National Park  
Date

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



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## PACIFIC WEST REGIONAL OFFICE Memorandum

L7617 (FWRO-P)

JUN 17 2008

Memorandum

To: Superintendent, Lassen Volcanic National Park

From: Regional Director, Pacific West Region

Subject: Environmental Compliance for Weed Management Plan

The revised *Finding of No Significant Impact* for the new parkwide weed management program is approved.

In order to complete this particular conservation planning and environmental impact analysis process, when the park announces implementation of the new program, copies of the attachment should be made available to all persons and agencies that consulted or commented on the supporting environmental assessment.

A handwritten signature in cursive script that reads "Jonathan B. Jarvis".

Jonathan B. Jarvis

Attachment

EXPERIENCE YOUR AMERICA

The National Park Service cares for special places saved by the American people so that all may experience our heritage.