FINDING OF NO SIGNIFICANT IMPACT

INVASIVE VEGETATION MANAGEMENT PLAN

June 2017

Purpose and Need for Federal Action

Crater Lake National Park staff are proposing to implement a new plan for the management of non-native, invasive plant species. Invasive plant species are widely considered to be one of the greatest threats to natural areas through their ability to change vegetation composition and structure, biodiversity, relationships with and distribution of pollinators and wildlife, soil biology, and ecosystem processes such as nutrient cycling and disturbance regimes. The purpose of this environmental assessment is to expand current invasive vegetation management efforts and implement a more comprehensive strategy. This plan will provide guidance for preventing new infestations of invasive plant species and outline an adaptive management process for controlling existing populations of invasive plants within the park using manual, mechanical, cultural, biological, and chemical methods. Additionally, the Invasive Vegetation Management Plan will establish methods for tracking and reporting invasive plant species' occurrence and their control in order to measure effectiveness over many years. This plan will provide park staff with tools to protect and enhance native vegetation and biodiversity, and maintain the integrity of park ecosystems and their associated processes. The duration of the Invasive Vegetation Management Plan is 15-20 years; however, adjustments may be made as determined by the adaptive management process.

Invasive plant species are one of the biggest threats to the park's ecosystems. Eighty-six non-native plant species have been documented within the park, with new species found on an annual basis. Park staff lacks a comprehensive strategy outlining goals and objectives for preventing the establishment of invasive plant species, controlling their spread, and monitoring the efficacy of control treatments.

ALTERNATIVES

The environmental assessment (EA) analyzed two alternatives, including the *No-Action Alternative* (continue current management) and the *Adaptive Management of Invasive Vegetation Alternative,* which is the selected alternative. The *Adaptive Management of Invasive Vegetation Alternative* is the NPS Selected Action because it best meets the purpose and need for the project as well as the project objectives to:

- Prevent the introduction and spread of invasive plant species within Crater Lake National Park,

- Survey for new invasive plant infestations to allow for swift treatment and control,
- Control invasive plant species within the park through eradication, containment, and reduction of invasive plant population densities and abundance,
- Utilize an adaptive management framework based on the best available science and current knowledge to determine the most effective and appropriate treatment options for proactively controlling invasive plant species,
- Monitor treatment efficacy and use results of monitoring to inform management.
- Manage invasive vegetation data to enable regular reporting of results and progress,
- Educate and inform park visitors, employees, and partners on the park's Invasive Vegetation Management program and involve them in prevention, control, and monitoring efforts, and
- Communicate regularly with park partners, including other federal, state, and county entities, and collaborate on invasive vegetation management and control.

Selected Action

The *Adaptive Management of Invasive Vegetation Alternative* is the NPS Selected Action as detailed in the Environmental Assessment released in April 2017. No comments, substantive or otherwise, were received during public review that necessitated any changes to the alternative that was detailed in the EA.

The selected action employs an adaptive management framework that prioritizes invasive plant species for treatment and then uses a Treatment Selection Protocol (TSP) to identify the most effective and appropriate treatment method. The TSP links knowledge of invasive plant species' biology and life history with the most effective control technique; it also identifies the most appropriate treatment method by considering site specific factors, how to cause the least ecological damage, and cost-effectiveness. The TSP is based on best available science and current knowledge, and incorporates National Park Service, regional, state, and Crater Lake-specific concerns. Additionally, the TSP is adaptive to enable park staff to adjust management actions and respond effectively and appropriately to changing conditions. This is important as new invasive plant species are observed within the park on an annual basis; having the appropriate methods available to respond to these new invasions is critical.

The TSP allows park staff to utilize new treatment methods, including herbicides that are safer, more effective, and more selective as they become available if they are approved through the TSP process. Under the *Adaptive Management of Invasive Vegetation Alternative*, ten new herbicides would be approved for use within the park as determined by implementation of the TSP. The TSP would also be employed to assess additional herbicides as needed. Additionally, biological control of invasive plant species would be considered on a case-by-case basis if an approved biocontrol method is identified and approved through the TSP process. The *Adaptive Management of Invasive Vegetation Alternative* is grounded in Integrated Pest Management principles.

Mitigation Measures

The following mitigation measures will be implemented during the project. The NPS employee assigned to ensure mitigation measures are implemented and effective are noted in brackets.

Soil Resources

- Risk of impacts to soil resources from drift, runoff, and spills would be avoided by using proper application techniques; adhering to label requirements; abiding by proper protocols for mixing, loading, and storage; and paying attention to current and forecasted weather conditions. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]
- Spill kits would be present wherever herbicide is stored, mixed, and/or loaded. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Water Quality and Hydrology

- Risk of impacts to water quality from drift, runoff, leaching, and spills would be avoided by using proper application techniques; adhering to label requirements; abiding by proper protocols for mixing, loading, and storage; and paying attention to current and forecasted weather conditions. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]
- Only herbicides approved for use in and near aquatic habitats would be used near surface waters. [Park Botanist]

Wetlands, Shorelines, and Riparian Areas

- Only herbicides approved for use in wetland environments would be used in and around the park's wetlands, shorelines, and riparian areas. Any surfactants or dyes used in concert with these herbicide applications would be approved for use in aquatic environments. [Park Botanist]
- Risk of impacts to wetlands, shorelines, and riparian areas from drift, runoff, leaching, and spills would be avoided by using proper application techniques; adhering to label requirements; abiding by proper protocols for mixing, loading, and storage; and paying attention to current and forecasted weather conditions. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Wildlife and Fish

- Work with wildlife and fish biologists to identify proposed treatments within habitat for sensitive wildlife and fish in the Invasive Vegetation Management annual work plan. Work with wildlife and fish biologists to avoid these areas or select treatment methods with minimal impacts to sensitive species. [Park Botanist, Terrestrial Ecologist, Fisheries Biologist, Aquatic Ecologist]
- Invasive vegetation management would occur outside of critical life history periods for sensitive wildlife and fish species. [Park Botanist, Aquatic Ecologist, Fisheries Biologist, Terrestrial Ecologist]
- Project areas would be surveyed immediately before invasive vegetation management activities commence to identify and avoid, if possible, wildlife species currently occupying the site. Wildlife species would be protected by avoiding treatments in the immediate proximity of burrows, and placing a no-treatment buffer around any area where a ground-nesting animal is flushed during pre-treatment surveys. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Vegetation

- Work with botanist to identify proposed treatments within habitat for sensitive plants in the Invasive Vegetation Management annual work plan. Work with botanist to avoid these areas or select treatment methods with minimal impacts to sensitive species. [Park Botanist]
- Project areas would be surveyed immediately before invasive vegetation management activities commence to identify and avoid, rare and sensitive plant species occupying the site. Any rare or sensitive plants found would be flagged and protected by a no-treatment buffer. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]
- Any non-target plant inadvertently treated with herbicide would be washed with water or have its affected parts broken off so the herbicide would not spread throughout the vascular system to unaffected parts of the plant. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]
- After working in areas infested with invasive plants, all personnel, gear, equipment, tools, etc. will be cleaned and free of off-site soil and/or organic debris prior to commencing work in a new location. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Cultural Resources

- Work with cultural resource staff to identify areas with sensitive cultural resources in the Invasive Vegetation Management annual work plan. Work with cultural resource staff to avoid these areas or select treatment methods with minimal impacts to sensitive resources. [Park Botanist, Park Archeologist]
- Should cultural resources be discovered during invasive plant survey and treatment activities, work must halt and a professional archeologist contacted for identification and evaluation of any finds. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians, Park Archeologist]
- Any culturally significant plant species or native vegetation within cultural landscapes that are inadvertently treated with herbicide should be washed with water or the affected plant parts should be broken off so herbicide will not spread throughout the vascular system. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Recommended Wilderness

- A Minimum Tool Analysis would be completed for activities conducted within the park's recommended wilderness. [Park Botanist, Terrestrial Ecologist]
- No mechanical treatment would occur with the park's recommended wilderness. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Visitor Experience

- Areas recently treated with herbicide would be closed and signed to the public as per label requirements. [Park Botanist, Lead Biological Science Technician, Biological Science Technicians]

Park Operations

- All park employees, partners, and cooperators would partner in implementing prevention measures for the introduction and spread of invasive plant species. [Park staff, partners, cooperators]

Alternatives Considered

Two alternatives were evaluated in the EA including the no action alternative and one action alternative. Under the No-Action Alternative (continue current management) control methods would be limited to manual removal for all park invasive plant species, with chemical control allowed only for roadside St. John's wort with the herbicide fluroxypyr (trade name "Vista"). The park would continue to treat rhizomatous invasive plant species and large infestations of invasive plant species through hand pulling. No chemical (excepting roadside St. John's wort with fluroxypyr), biological, or mechanical control of invasive vegetation would occur.

In addition to the alternatives analyzed in the EA, two additional alternatives were considered but dismissed from further review, as they would not meet the purpose, need or objectives of the proposed project. These alternatives consisted of no use of chemical treatment methods; and treating invasive plants only in the front-country and along park roadsides.

The *Adaptive Management of Invasive Vegetation* is the Selected Alternative as described in the previous section.

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

CEQ regulations at 40 CFR Section 1508.27 identify ten criteria for determining whether the Selected Action will have a significant effect on the human environment. The NPS reviewed each of these criteria given the environmental impacts described in the EA and determined there will be no significant impacts for any of the criteria. The criteria most relevant to this determination are addressed more fully below.

Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Implementation of the Selected Action will result in some adverse impacts and some beneficial impacts; however, it will not result in any significant adverse impacts.

Summary of Adverse Impacts

Under the selected action, there will be negligible to minor, temporary, and localized adverse effects during implementation of control methods. These include impacts to soil resources and water quality from hand-pulling invasive vegetation and subsequent sedimentation of adjacent water bodies. There are risks of herbicide moving off-target through drift, runoff, leaching, and spills and impacting soil resources; water quality; wetlands, shorelines, and riparian areas; wildlife and fish; vegetation; and cultural resources such as culturally significant plant species or historic plantings. There are impacts to wildlife from consumption of treated plants, direct herbicide contact, and being flushed from nests or burrows. There are impacts to wildlife and visitor experience from noise resulting from mechanical treatments such as using string trimmers. There are impacts to wilderness from noise resulting from implementing control

methods. There are impacts to the visitor experience from temporary area closures post-chemical treatment.

Longer term adverse impacts from invasive vegetation control activities include chronic exposure of humans, wildlife, and fish to chemical treatment methods.

Summary of Beneficial Impacts

Under the selected action there will be long-term, widespread beneficial impacts. These include protecting native plant communities by removing and/or controlling invasive vegetation that threatens to outcompete and/or replace native plants. Maintaining intact vegetation communities with the assemblage of native plant species that have evolved to thrive in the Crater Lake National Park environment is the best way to maintain and promote healthy ecosystem structure, composition, and function. Native plant communities serve as the foundation for healthy soils; help provide good water quality; support healthy wildlife and fish populations; provide the 'naturalness' that is the foundation of wilderness character; and provide the backdrop for the visitor experience at Crater Lake National Park.

Degree of effect on public health or safety

As noted above, the action alternative will provide an adaptive management framework for managing the park's invasive vegetation. Employees tasked with chemical control methods will maintain pesticide applicator credentials licensed by the state of Oregon. This entails a rigorous examination process focused on pesticide laws and safety. Additionally, the park has standard operating procedures in place for safely working with herbicides and abides by all NPS, state, and federal workplace safety regulations. Areas treated with herbicide in the park will be temporarily closed and signed to the public to prevent public exposure to herbicides. The restricted entry interval will be determined by herbicide label requirements. When proper techniques for herbicide use are followed and temporary area closures are in effect, there will be negligible effects on public health or safety.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

Annual work plans are approved by park resource specialists prior to the implementation of field work each year. Through that process, proposed work is reviewed by location and treatment type. Natural and cultural resource specialists identify avoidance areas and help develop mitigations to avoid or minimize the risk of adversely impacting cultural resources, wetlands, water quality, or other areas of unique resources and/or critical habitat for sensitive species. Strategies to minimize or negate known potential adverse effects to sensitive resources from project activities are developed and are implemented as noted in the mitigations section.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places, or may cause loss or destruction of significant scientific, cultural, or historical resources

Effects to districts, sites, highways, structures, or objects listed in the National Register of Historic Places or other significant scientific, cultural, or historic resources were analyzed in the EA and no significant impacts were identified.

Whether the action is related to other actions with individually insignificant, but cumulatively significant, impacts

Cumulative effects were analyzed in the EA and no significant cumulative impacts were identified.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

The selected action may affect, but is not likely to adversely affect bull trout, northern spotted owl, and gray wolf or any critical habitat for these species. While work may occur within critical habitat for bull trout, and within NSO habitat, the small scope of disturbance associated with project activities combined with mitigations in place to protect these species from project impacts is unlikely to have a negative effect on these species. The gray wolf is rare within the park and no known den or rendezvous sites are known to occur in the park; the small scope of disturbance associated with project activities is unlikely to have a negative effect on this species. In a letter dated June 9, 2017, the U.S. Fish and Wildlife Service concurred with the park's determination that the IVMP EA may affect, but is not likely to adversely affect bull trout, northern spotted owl, and gray wolf or any critical habitat for these species.

The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The selected action is not considered highly controversial and are generally consistent with how other land management agencies manage invasive plant species. No substantive concerns regarding the human environment were raised during the agency or public scoping periods for this EA.

The degree to which the potential impacts are highly uncertain or involve unique or unknown risks.

The risks associated with the selected action are not unique or uncertain. The use of chemical control is proposed as a tool in the proposed action. Herbicide risk assessments have been completed, were included in the EA, and are a part of the decision making process for selecting invasive vegetation control methods.

The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The actions proposed in the selected action are not considered precedent setting. Invasive plant control methods will be based on the best available scientific research through an adaptive management approach.

Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The selected action violates no known law of other requirement imposed for the protection of the environment. The proposed action provides management tools for invasive vegetation management to protect the environment per law and NPS policy and mandates.

Public Involvement and Agency Consultation

Two public scoping periods were conducted as the Invasive Vegetation Management Plan was developed. Stakeholder scoping was held November 3 through December 3 2014. During this period three comments were received. The comments offered general support of invasive plant management, topics to be addressed in the plan including the use of chemicals, and a comment from the Klamath Tribes about ensuring the protection of sacred sites. Public scoping was conducted February 3 through March 9 2016. No comments were received during this period. All comments received during the scoping periods were addressed in the plan and environmental assessment.

The EA was made available for public review and comment during a 30-day period ending May 3, 2017. A press release was distributed to several media outlets and electronically to the park public information email list (containing over 200 individuals and organizations), and to other stakeholders that are interested in Invasive Plant Management (i.e., Oregon Department of Agriculture). The press release was also posted to the park website. All media information provided by the NPS contained a link to comment page of the NPS Planning, Environment, and Public Comment (PEPC) website. A hard copy was made available at park headquarters and the press release indicated hard copies could be requested if desired.

Crater Lake National Park staff notified the Klamath Tribes and the Cow Creek Band of Umpqua Tribe of Indians as required by 36 CFR 800. Comments from a tribal member were received during the stakeholder scoping phase and were incorporated in the plan. Hard copies of the Environmental Assessment were sent to both tribes along with a letter requesting comment and neither tribe raised concerns about the action. The park intends to maintain ongoing conversations with the tribes concerning invasive plant management planning as staff develop annual work plans.

The NPS submitted a letter related to this project to the Oregon state historic preservation officer (SHPO) on April 3, 2017. In a letter dated May 3, 2017 (SHPO Case No. 17-0587) the Oregon SHPO concurred with the NPS determination that no adverse effect to any significant above-ground historic resources would occur as a result of the proposed action. A separate letter addressing archeological resources was received on May 12, 2017 that also concurred with the finding of no adverse effect to archeological sites, with the mitigation that archeological resources be investigated prior to project implementation where heavy machinery and fire are used for invasive species treatment.

Pursuant to the requirements of section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.), Crater Lake park staff requested informal consultation from the U.S. Fish and Wildlife Service (Service) for the proposed action. In a memorandum from the Klamath Falls Fish and Wildlife Office dated June 9, 2017, the U.S. Fish and Wildlife Service concurred the plan is not expected to result in adverse effects to federally-listed species or critical habitat. Based on the Service's review of Alternative 2 of the Environmental Assessment, minimization measures, and current occupancy information for federally-listed species, we concur that the Plan may affect, but is not likely to adversely affect the gray wolf, northern spotted owl, and bull trout. Similarly, we concur that the Plan may affect, but is not likely to adversely affect designated critical habitat for bull trout.

Two comments were received via PEPC. One comment expressed support for the proposed action; the other comment requested a list of invasive species occurring in the park, which was provided as an appendix to the EA.

Conclusion

As described above, the Selected Alternative does not constitute an action meeting the criteria that normally require preparation of an environmental impact statement (EIS). The Selected Alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA. This finding is supported by the environmental analysis completed and documented in the Environmental Assessment prepared for this project and through the consideration of stakeholder input received during scoping and public review. The NPS also established and is capable of implementing the mitigations described in this document to avoid, reduce or eliminate impacts to park resources resulting from implementing the Selected Alternative.

Based on the foregoing, the NPS has determined that an EIS is not required for this project and thus will not be prepared. Implementation of the IVMP will begin as soon as practicable.

Recommended:

6/21/17

Craig Ackerman — Date
Superintendent, Crater Lake National Park

Approved:

Laura E. Joss

7/14/2017

Laura E. Joss — Date
Director, Pacific West Region, National Park Service