



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific West Region
333 Bush Street, Suite 500
San Francisco, California 94104-2828



IN REPLY REFER TO:
L7617 (PWRO-PP)

12 MAR 2014

Memorandum

To: Superintendent, Great Basin National Park

From: Regional Director, Pacific West Region

Subject: Environmental Compliance for Integrated Pest Management

The *Finding of No Significant Impact* for implementing the updated integrated pest management program is approved.

To complete this particular compliance effort, the park should send notice of the approved plan to all individuals and organizations who received or commented on the supporting environmental assessment.

Christine S. Lehnertz

Attachment

FINDING OF NO SIGNIFICANT IMPACT INVASIVE PLANT MANAGEMENT PLAN

National Park Service, U.S. Department of the Interior
Great Basin National Park
February, 2014

INTRODUCTION

The National Park Service has prepared this Finding of No Significant Impact (FONSI), in accordance with the National Environmental Policy Act (NEPA), for the selected alternative of the **Invasive Plant Management Plan Environmental Assessment (EA)**. The FONSI, along with the EA, comprise the complete record of environmental impact analysis for the project. In reference to the 2006 Management Policies, a Determination of Non-Impairment (DNI) was also prepared and is attached to the FONSI.

This document describes the selected alternative and provides an explanation of why it will have no significant effects on the human environment. The EA examined the impacts resulting from the use of Integrated Pest Management (IPM) strategies which combine manual, herbicidal, biological, and cultural control methods, as well as selected combinations of these methods.

PURPOSE AND NEED FOR ACTION

The purpose of this invasive plant management plan is to provide guidelines for management actions that would be taken to reduce impacts of invasive plants to park resources. The need for action is that invasive plants are spreading and increasing in abundance throughout Great Basin National Park, which is contrary to NPS Management Policies of preserving and restoring native plant populations (4.4.1).

ALTERNATIVES

Selected Action

Alternative 2, Implement Full Integrated Pest Management Strategy (IPM)

The National Park Service selects Alternative 2 as the alternative for implementation. This alternative meets the purpose and need for the project. No changes to the preferred alternative (as described in the EA) have been incorporated in the selected alternative.

The preferred alternative would implement a full IPM strategy that includes inventory, monitoring and documentation, manual treatments, herbicide treatments, biological treatments, education and outreach, seed collection and storage, and restoration within Great Basin National Park and the Baker Administrative Site. Only licensed contractors or National Park Service staff certified to use herbicides would be able to apply herbicides or instruct NPS crews and/or volunteers in treatment methods.

Future inventory and treatment areas would be chosen based on verified locations of individuals and populations of invasive species. Treatments would be particularly concentrated in areas of disturbance that invasive plants prefer (within 100 feet of roads and campgrounds and 200 feet of trailheads), in ecological communities considered susceptible to invasive plant invasion due to their productive soils, variable disturbance regimes, soil moisture availability and areas of high traffic and recreational use. These areas encompass approximately 1430 acres within the park. Weed inventories and treatments would not be limited to these areas but they are considered the most likely to require future inventory and treatments.

Manual Treatments

Manual treatments would include: cutting, pulling, removing and collecting seeds, or digging plants to prevent re-sprouting and re-growth. Methods may include: 1) hand pulling; 2) use of hand tools including: trowels, shovels, Pulaskis, hand saws, axes, machetes, hoes, brush hooks, pruners, loppers, and hand clippers; and 3) power tools including chainsaws, weed trimmer, mowers, and motorized wheel barrows. Manual treatments are species-selective, meaning only the target plants are impacted.

Herbicide treatments

Herbicides would be used on invasive plant species that cannot be effectively controlled by other methods. Use of herbicides would follow all permitted state and Federal guidelines. Only herbicides registered and approved by EPA's Office of Pesticide Programs would be used and applications would be consistent with product labeling. The decision to use herbicides, types of herbicides to be used, application concentrations, rates, and times would depend on treatment objectives, topography, size of infested area, invasive plant density, proximity of sensitive species, plant phenology, soil texture, distance to water, potential risks for ground water contamination, weather conditions, and season. Herbicide application planning would consider potential impacts to non-target plants and would ensure minimum risk to human health and safety. The two methods proposed, backpack spraying and cut stump applications, are considered species selective. Aerial spraying or boom spraying are not species selective and are not proposed.

Biological Treatments

Biological treatments include insects, fungi, and bacteria which reduce the abundance and vigor of an invasive plant species. They may be used alone or in conjunction with herbicide and/or manual treatments. Use of biological controls would follow all permitted state and Federal guidelines. Only, biological control agents registered and approved by USDA's Animal and Plant Health Inspection Service (APHIS) would be used and releases would be consistent with permit requirements.

Education and Outreach

Education and outreach is important to foster an increased interest and understanding of invasive plant management issues, techniques, and identification. Education programs would include staff training, visitor awareness, safety messages, current treatment locations, and public education through the use of video and electronic media, printed materials, interpretive talks, school programs, public field days, and volunteer opportunities. A point of contact would be identified for reporting invasive plant observations.

Restoration

Restoring native vegetation would provide increased resiliency to an environment influenced by climate change. In addition, carbon sequestration would be enhanced in native communities compared to annual grass communities that burn at more frequent intervals (Bradley et al. 2006). Restoration treatments are practices that promote growth of desirable plants and reduce opportunities for invasive plants. Treatments include seeding, planting, and mulching. Seeding is used to encourage re-establishment of native plants and prevent establishment of invasive plants. Seeding is required in areas where native plant populations existed prior to disturbance or invasion and where density and diversity are not adequate within and surrounding treated infestations. Active restoration speeds recovery towards a healthy plant community. Methods vary and often include a combination of soil scarification, collection and storage of native seed, spreading of native seed and mulch, addition of soil amendments, and planting native species. New methods of restoration management would be used to achieve desired conditions and goals as they are developed.

Other Alternatives Considered

Alternative 1, No Action

Under this alternative, the park would not treat invasive plants by any method, nor would the park restore any areas infested with invasive species solely for the purpose of native plant restoration. The park would also not conduct education and outreach programs about invasive plants. The park would not monitor invasive plant populations to document size and number of infestations.

Alternative 3, No Herbicide Use

Under this action alternative all components of IPM strategy would be implemented except for use of herbicide treatments.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The National Park Service (NPS) has determined that the environmentally preferred alternative for this project is Alternative 2, the selected alternative. The environmentally preferred alternative is the alternative that will promote the national environmental policy expressed in NEPA (sec. 101 (b)). This includes alternatives that:

- Fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations
- Ensure for all Americans a safe, healthful, productive, and esthetically and culturally pleasing surroundings
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, whenever possible, an environment that supports diversity and variety of individual choice
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities

- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources

The Council on Environmental Quality Regulations (CEQ) regulations implementing NEPA and the NPS NEPA guidelines require that “the alternative or alternatives which were considered to be environmentally preferable” be identified (Council on Environmental Quality Regulations, Section 1505.2). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment. It also means identifying the alternative that best protects, preserves, and enhances historic, cultural and natural resources.

As documented in the EA, Great Basin National Park has determined that the environmentally preferred alternative for this project is, Alternative 2-Implement Full IPM Strategy, (which is selected for implementation). IPM is a decision making process that coordinates knowledge of pest biology, the environment, and available technology to prevent unacceptable levels of pest damage by cost-effective means while posing the least possible risk to people, resources, and the environment.

Effective management of large populations of non-native invasive species such as spotted knapweed, musk thistle, and bull thistle cannot be accomplished through the use of Alternative 3-No Herbicide Use. Although the use of manual treatments is effective in treating small localized occurrences of non-native species, it is limited in use for large populations because of timeliness in treatment, reduced coverage area, personnel availability, and cost effectiveness.

MITIGATION

Mitigation measures are presented as part of the selected action. These measures have been developed to minimize or reduce adverse effects of the selected action.

Table 1. Mitigations

Resource Area	Mitigation	Responsible Party
Water Quality	All herbicide treatments will be performed or supervised by licensed personnel according to and consistent with label instructions. No herbicides will be applied to or in the immediate vicinity of streams or open surface water unless product is specifically designed and approved by the EPA for such use. All herbicides or biological controls to be used shall be reviewed and approved by the National Parks Service’s Regional Integrated Pest Management Coordinator.	Park’s Invasive Plant Coordinator
Health and Human Safety	Herbicide application areas will be closely monitored to assure that any potential for negative impacts to humans is minimized. Herbicide will be applied only to targeted plants	Park’s Invasive Plant Coordinator

	using hand or backpack sprayers. Areas in which herbicides have been applied will be appropriately signed and/or flagged to warn visitors and staff to avoid the area. Residents will be notified prior to application.	
Unique or important wildlife or wildlife habitat; Species of Special Concern; Unique or important fish or fish habitat	Herbicide application areas will be closely monitored to assure that any potential negative impacts to native vegetation, wildlife, and aquatic species is minimized. Herbicide will be applied only to targeted plants using hand or backpack sprayers.	Park's Invasive Plant Coordinator

Introduce or promote non-native species	Use of weed free soil, mulch and straw for projects within park boundaries.	Park's Invasive Plant Coordinator
	Prior to beginning any construction project, all equipment and vehicles will be thoroughly pressure washed to remove foreign soil and vegetative matter to minimize potential of introduction of non-native plants to the project area.	Park's Invasive Plant Coordinator, Contractor Officer Technical Representative (COTR)
	Horses and other livestock should be fed weed-free feed 2-3 days prior to entering the park and during their stay in the park. Horses and other livestock should be brushed and cleaned prior to entering the park. Instructions to potential visitors will be posted on the Park's website.	Park's Invasive Plant Coordinator
Cultural Resources	National Historic Preservation Act, Section 106 procedures are to be followed on all treatment areas involving ground disturbing activity or historic structures including review, inventory, evaluation for NR eligibility and consultation. Cultural resource staff will be consulted in areas identified for herbicide or biological controls to avoid damage to potential ethnographically important plants. Tribal consultation may be required.	Park's Invasive Plant Coordinator

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

Scoping

Internal scoping was conducted on March 15, 2012 through an Interdisciplinary team of Great Basin National Park Staff who determined issues and impact topics through the use of the Environmental Screening Form in the Planning, Environment and Public Comment (PEPC) website.

Public scoping was conducted between February 10, and March 15, 2013. Scoping brochures or news releases were mailed, emailed or faxed to over 150 individuals, tribes, groups or businesses. In addition, the scoping brochure was linked to the Great Basin National Park website and was posted in PEPC. No public meetings were held.

Comments that rose to the level of issues as a result of public scoping include:

- Impacts to water quality
- Impacts to aquatic species
- Impacts to wetlands
- Public health and safety

Comments about all of these issues appear to originate directly from concerns relating to the use of herbicides in the general vicinity of surface water resources, as reflected in the following specific comments. As a result this EA includes a “No Herbicide Use” alternative (Alternative 3).

- Using biological control and/or native plant/grass spray to outcompete weeds and the need for spraying (herbicide use)
- No spraying (herbicide use) in Snake Creek watershed
- Need to list where the Park currently sprays, for what, when, (name of) chemical and (targeted) weed

Comments also included additional recommendations that did not rise to the level of issues:

- Allow harvesting of certain invasive plants (as herbs) for personal use
- Renaming the plan to Invasive Plant Plan
- Adding Russian olive and salt cedar to list of (targeted) invasive plants
- Removal of willows lining stream banks

One printed copy of the EA was distributed to each of the following locations: White Pine County Library, EskDale Center, Lehman Caves Visitor Center and Great Basin Visitor Center. One copy on a compact disk was also sent to one individual who requested it.

The EA was uploaded to the PEPC website and was initially available for public review and comment from September 13, 2013 to October 12, 2013. However, due to the government shutdown from October 1, 2013 to October 16, 2013, the public review and comment period was extended for 16 additional days from October 17, 2013 to November 1, 2013. In response to a letter from the White Pine County Commission requesting an extension of the public review and comment period because of the government shut-down, the park Superintendent granted the

extension. The final deadline for comments was December 11, 2013. The total period for the public review and comment period was 73 days. No comments were received during the public review and comment period.

Agency Consultation

Nevada State Historic Preservation Office

The Nevada State Historic Preservation Office was not consulted because, at present, no specific treatment areas have been identified. Park Cultural Resources staff will be notified once treatment areas and preferred treatment methods have been identified, so that they may pursue appropriate level consultation with the Nevada State Historic Preservation Office.

State of Nevada, Division of Environmental Protection

The park would not annually treat sufficient area in wetlands or distance along stream sides to require a general pesticides application permit from the Nevada Division of Environmental Protection, therefore no consultation was required.

Tribes

The National Park Service has consulted with Native American tribes and copies of the Invasive Plant Management EA will be forwarded to each respondent for review or comment. If subsequent issues or concerns are identified, appropriate consultations would be undertaken for specific identified locations.

U.S. Fish and Wildlife Service

There are no threatened or endangered animal species found in the park, therefore no consultation is necessary with the U.S. Fish and Wildlife Service.

Army Corps of Engineers

There was no consultation with the Army Corps of Engineers. No construction would occur in waterways or wetlands, nor would any actions taken under this plan have the potential to release fill into waterways or wetlands.

Other agencies that the park is consulting with

The park has entered into an MOU that established the Snake Valley Cooperative Weed Management Area in cooperation with White Pine County, White Pine Conservation District, Eastern Nevada Landscape Coalition, BLM Ely Field Office, Ely District of Humboldt-Toiyabe National Forest (USFS), U.S. Fish & Wildlife Service, Nevada Division of Wildlife, Nevada Department of Transportation, Natural Resources Conservation Service, University of Nevada Cooperative Extension, and Tri-County Weed Project. This MOU defines the terms and conditions under which the participants will cooperate, coordinate activities, and share resources necessary for the prevention and control of noxious weeds within the Snake Valley CWMA.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE QUALITY OF THE HUMAN ENVIRONMENT

The NPS used the following NEPA criteria and factors defined in 40 CFR §1508.27 to evaluate whether the selected alternative would have a significant impact on the environment.

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an EIS. There were no significant impacts that were identified as part of the analysis for this project. The selected alternative –Implement Full Integrated Pest Management Strategy should have improved short and long-term control of non-native plant populations, whose control is, (1) necessary to fulfill specific purposes identified in the establishing legislation and proclamation of Great Basin National Park (2) key to the natural or cultural integrity of the Park (3) identified as a goal in the Park’s GMP or other relevant NPS planning documents. There will be no impairment of the Park’s resources or values.

Degree of effect on Public Health or Safety.

The selected alternative should not adversely impact public health and safety when herbicide use is consistent with IPM Strategy protocols and all permitted state and federal guidelines. Only herbicides registered and approved by EPA's Office of Pesticide Programs would be used. Park visitors in and around campgrounds, trailheads, and creeks and local downstream neighbors who use surface water for drinking, cooking, bathing, ranching and agriculture may be indirectly exposed to non-harmful low levels of EPA-approved herbicides. Mitigations described above will further reduce potential human exposure.

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.

Many invasive, non-native plant species occur within the Park in areas where there has been ground disturbance. Limited cultural resource surveys have been completed in current locations where invasive non-native species occur. In areas where infestations occur, archeological surveys will be completed prior to treatment. Treatments in wetlands to remove invasive plants are expected to improve overall ecological function.

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

Issues raised during public scoping were impacts to water quality, aquatic species, wetlands and public health and safety. These issues are not likely to be highly controversial because herbicide application would follow IPM Strategy protocols, EPA’s Office of Pesticide Program guidelines, mitigation measures, labeling and use instructions, and application by licensed and trained personnel.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.

There are no highly uncertain or unknown risks that are anticipated to occur. The actions proposed under the selected alternative are anticipated to pose little risk to the human environment if application protocols and use are consistent with labeling.

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 selected alternative will result in beneficial effects and will establish a precedent for future actions within the park. The National Park Service has already established a precedent for the use of herbicide, biological, and mechanical treatment of invasive non-native plants.

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

The EA analyzed cumulative impacts of the plan and no significant impacts were identified.

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

Implementation of the selected alternative should not adversely affect or cause loss or destruction of scientific, cultural or historic resources. Long-term benefits to objects listed on the National Register of Historic Places will likely occur.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.

There are no endangered or threatened species within in the park. No critical habitat has been designated. No endangered or threatened species or designated critical habitat would be adversely affected.

Whether the action threatens a violation of Federal, state, or local environmental protection law

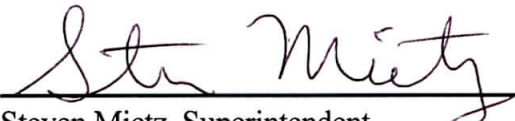
The selected alternative will not violate Federal, state, or local environmental protection laws as all protocols and labeling use instructions will be followed and all treatments will be applied or supervised by licensed applicators.

CONCLUSION

Implementation of the selected alternative for the Invasive Plant Management Plan will have no significant impacts on the human environment. The determination is sustained by the analysis in the EA, agency consultations, the inclusion and consideration of public review, and the capability of mitigations to reduce or avoid impacts. Adverse environmental impacts that could occur are negligible to minor in intensity, duration, and context and less-than-significant; and there would be no unacceptable impacts. As described in the EA, there are no highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence. There are no previous, planned, or implemented actions, which in combination with the selected

alternative would have significant effects on the human environment. Requirements of the NEPA have been satisfied and preparation of an Environmental Impact Statement is not required. The park will implement the selected alternative as soon as practical.

Recommended:

 3/3/14
Steven Mietz, Superintendent Date
Great Basin National Park

Approved:

 03/12/2014
Christine Lehnertz, Regional Director Date
Pacific West Region, National Park Service

Attachment 1

DETERMINATION OF NON-IMPAIRMENT

INVASIVE PLANT MANAGEMENT PLAN GREAT BASIN NATIONAL PARK

While Congress has given the National Park Service (NPS) management discretion to allow impacts within parks, that discretion is limited by the statutory requirements, generally enforceable by the federal courts, that the NPS must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This cornerstone of the Organic Act establishes the primary responsibility of the NPS; to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities to enjoyment of them.

The impairment of park resources and values may not be allowed by the NPS unless directly and specifically provided for by legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of the park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact to any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

1. necessary to fulfil specific purposes identified in the establishing legislation or proclamation of the park, or
2. key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
3. identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to continue to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily, lead to impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park.

National Park Service's *Management Policies 2006* requires analysis of potential effects to determine whether or not actions would impair park resources. The park resources and values that are subject to the no-impairment standard include the park's scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them. This includes to the extent present in the park, the following:

- The ecological, biological and physical processes that created the park and continue to act upon it.
- Scenic features
- Natural visibility, both in daytime and at night
- Natural landscapes
- Natural soundscapes and smells
- Water and air resources
- Soils
- Geological resources
- Paleontological resources
- Archeological resources
- Cultural landscapes
- Ethnographic resources
- Historic and prehistoric sites, structures, and objects
- Museum collections
- Native plants and animals
- Appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them
- The park's roles in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the National Park System, and the benefit and inspiration provided to the American people by the National Park System
- Any additional attributes that encompass the specific values and purposes for which the park was established.

The authorizing legislation for Great Basin National Park ("the park") was signed on October 27, 1986, "to preserve for the benefit and inspiration of the people a representative segment of the Great Basin of the Western United States possessing outstanding resources and significant geological and scenic values." It further stated that the NPS is to "protect, manage and administer the Park in such a manner as to conserve and protect scenery, the natural, geologic, historic, and archeological resources of the Park, including fish and wildlife and to provide for the public use and enjoyment of the same in such a manner as to perpetuate these qualities for future generations."

The Park was established to conserve and protect the natural resources, including fish and wildlife. The Park's 1993 General Management Plan (GMP) calls for eradicating or controlling introduced plant species if they threatened to spread or compete with park resources and if control was feasible. The lack of action could preclude the Park from maintaining its purposes and values as established in the Park's enabling legislation.

TOPICS INCLUDED IN IMPAIRMENT ANALYSIS

The topics which were considered in the EA and which are subject to impairment analysis are as follows:

Human Health or Safety

Using IPM practices for invasive plant management could have direct and indirect short-term, negligible adverse effects on human health and safety. However, use of EPA-approved herbicides consistent with labeling instructions and proper application procedures and locations will minimize any such potential effects. Additional mitigations described in the Environmental Assessment will further reduce the potential for adverse effects.

Implementation of the selected alternative would result in no impairment to human health or safety and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Introduce or Promote Non-native Plant Species

Under the selected alternative there would be both minor short and long-term beneficial effects on the control of non-native plant populations.

Implementation of the selected alternative would result in no impairment resulting from introduction or promotion of non-native plant species and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Unique or Important Wildlife or Wildlife Habitat

Riparian habitats support the greatest diversity of wildlife in desert environments but are generally also some of the most likely to be impaired by proliferation of invasive plants. An IPM strategy for controlling or eliminating invasive plants in those habitats is likely to help sustain abundant and diverse wildlife and wildlife habitats. Under the selected alternative there would be both minor short and long-term beneficial effects to unique or important wildlife or wildlife habitats.

Implementation of the selected alternative would result in no impairment to unique or important wildlife or wildlife habitat and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Water Quality or Quantity

The selected alternative would potentially have short term negligible effects to water quality through occasional increases in turbidity from soil disturbance and incorporation of very low levels of herbicides into stream water. The selected alternative would have short term negligible adverse effects on water quality. The selected alternative would have no effects on water quantity.

Implementation of the selected Alternative would result in no impairment to water quality or quantity and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Floodplains or Wetlands

Removal or control of invasive plants in wetlands and floodplains promote natural function of wetlands and floodplains. Use of approved herbicides or manual treatments to remove invasive plants from these habitats will help maintain them into the future. The selected alternative would have long term minor beneficial effects to floodplains and wetlands.

Implementation of the selected alternative would result in no impairment to floodplains or wetlands and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Species of Management Concern and Their Habitat

Successful invasive plant management helps to maintain or restore native habitat for use by a number of the park's Species of Management Concern. Effects to Species of Management Concern and their habitats from the selected alternative will be minor, long term, and beneficial.

Implementation of the selected alternative would result in no impairment to species of special concern or their habitat and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Unique, Essential or Important Fish or Fish Habitat

The selected alternative would produce negligible short-term adverse effects to water quality but minor long term beneficial effects to unique, essential or important fish or fish habitats by promoting native plant populations that provide cover, ameliorate water temperature, and provide nutrition to invertebrates that fish feed upon.

Implementation of the selected alternative would result in no impairment to unique, essential or important fish or fish habitat and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Cultural Resources

The Environmental Assessment provides guidance in the form of mitigations to avoid adverse to cultural resources.

Implementation of the selected alternative, as prescribed, would result in no impairment to cultural resources and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.

Long-term Management of Resources or Land/Resource Productivity

The selected alternative uses an IPM strategy to avoid proliferation of invasive plants which, if left unchecked, could eventually impair park resources and land productivity. This type of management will maintain natural populations of native plants and wildlife, and long-term land productivity. Effects to long-term management of resources or land/resource productivity from the selected alternative will be minor, long term, and beneficial.

Implementation of the selected alternative would result in no impairment to long-term management of resources or land/resource productivity and is consistent with §1.4.7.1 of NPS *Management Policies* 2006.