

National Park Service
U.S. Department of the Interior

Alaska Regional Office



Finding of No Significant Impact

Alaska Region Invasive Plant Management Plan, February 2010

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Regional Director, Alaska

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Date

FINDING OF NO SIGNIFICANT IMPACT

Alaska Region Invasive Plant Management Plan Environmental Assessment February 2010

The National Park Service (NPS) prepared an environmental assessment (EA) to consider an Invasive Plant Management Plan (IPMP) to address invasive plant infestations in National Park System units throughout the Alaska Region. Invasive plants are defined as non-native plant species whose introduction does or is likely to cause economic or environmental harm or harm to human health. The IPMP uses an adaptive management approach to controlling infestations on park lands. The plan relies on use of a decision tree to identify appropriate plant control methods that managers can select to eradicate or contain invasive plant infestations, including physical (pulling, digging, burial, mowing, cutting, burning, and heat treatments) and chemical (herbicide) treatments.

The NPS has selected Alternative 2 (NPS Preferred Alternative), which adopts the IPMP, an adaptive management plan to control invasive plant infestations on national park lands in Alaska. It includes monitoring of program effectiveness and effects and mitigating measures with best management practices to minimize the introduction of new invasive plant infestations and to minimize the adverse effects of herbicides if and when applied.

Attachment A to the FONSI provides NPS's responses to substantive comments. Nineteen parties submitted written comments on the original EA during a 60-day public comment period, and additional comments were received from 9 parties during a 50-day public review of the revised EA. The NPS preferred alternative (Alternative 2) was modified due to public comment to include monitoring of effects after herbicide applications, address the worst case scenario involving uses of herbicides, and to modify the decision tree to provide more clarity and flexibility to address likely scenarios. The EA was augmented to provide additional supportive documentation concerning herbicides and language to add a monitoring step after herbicides are applied. The revised EA was provided to commenters on the original EA, mailed to key stakeholders, publicly announced via a press release, and posted on the NPS Planning Environment and Public Comment (PEPC) web page.

ALTERNATIVES

Two alternatives were evaluated in the EA.

Alternative A - No Action (Status Quo)

Under the No-Action alternative, the NPS would continue to treat invasive plant infestations in Alaska National Park System units with manual or mechanical control methods where feasible, as determined on a case by case basis. Where multiple years of control are ineffective, alternative methods would be used experimentally, including thermal and additional mechanical treatments. The estimated total acres needing treatment would be about 1,266 acres between 2005 and 2018.

Where physical control methods fail, further NEPA analysis would be necessary for chemical control methods.

Alternative B – Adopt the Invasive Plant Management Plan with a Decision Tree (NPS Preferred Alternative)

An adaptive management approach would use a decision tree to determine how to most effectively control invasive plant infestations in Alaska National Parks while posing the least overall risk to people, resources, and the environment. The majority of the infestations in terms of locations and area would be treated with the standard manual and mechanical control methods described in alternative 1. Where physical control methods would be ineffective, spot herbicide applications would be allowed in specified circumstances following a decision tree analysis and using herbicide best management practices (see EA appendix H). Acres treated since 2005 and projected to be treated through 2018 under Alternative 2 would total about 860 acres, including both physical and chemical control methods (EA Table 2.3).

Under this alternative, herbicide uses are estimated on about 10 acres per year initially, but as known infestations are brought under control, the number of acres treated per year will decline, resulting in no more than a projected total of 50 acres treated with herbicides over the next 10 years.

PUBLIC INVOLVEMENT

The original EA was issued for public review and comment from August 29, 2008 to October 30, 2008 (62 days). The EA was sent by mail to 71 agencies, organizations, and individuals and was posted on the NPS PEPC website.

Comments on the EA were received from the State of Alaska (SOA), the U.S. Forest Service (USFS), National Parks and Conservation Association (NPCA), Alaska Community for Action on Toxics (ACAT), Alaska Survival (AS), Copper Country Alliance (CCA), Friends of Glacier Bay (FOGB), and several individuals. The public comment did not change the conclusions in the EA concerning the environmental effects of the proposed action, but they did lead to a change in the proposed action and the addition of analysis and references to support the conclusions. The decision tree was revised and the worst-case scenario for the potential use of herbicides was described. The comments from the SOA, USFS, NPCA, ACAT, AS, CCA, FOGB, and several individuals were responded to in Attachment A.

The revised EA was released for public review from October 1 until November 20, 2009 (51 days). The EA was mailed to about 70 parties and posted on the NPS PEPC website. Comments were received from the State of Alaska, the Citizen's Advisory Commission on Federal Areas, Ahtna Incorporated, National Parks and Conservation Association (NPCA), Alaska Survival (AS), Copper Country Alliance (CCA), and a couple individuals.

DECISION

The NPS decision is to select Alternative B – Adopt the Invasive Plant Management Plan with a decision tree (Figure 1) to:

1. Continue physical control methods where effective;
2. Allow limited use of herbicides to control infestations not responding to physical control methods; and
- 3) Implement mitigating measures with best management practices and monitoring of overall program effectiveness and environmental effects.

MITIGATING MEASURES

Mitigating measures to reduce the impacts of invasive plant control efforts in Alaska NPS units include prevention measures, education, collaboration, best management practices for herbicide use, restoration, and protection of historic properties.

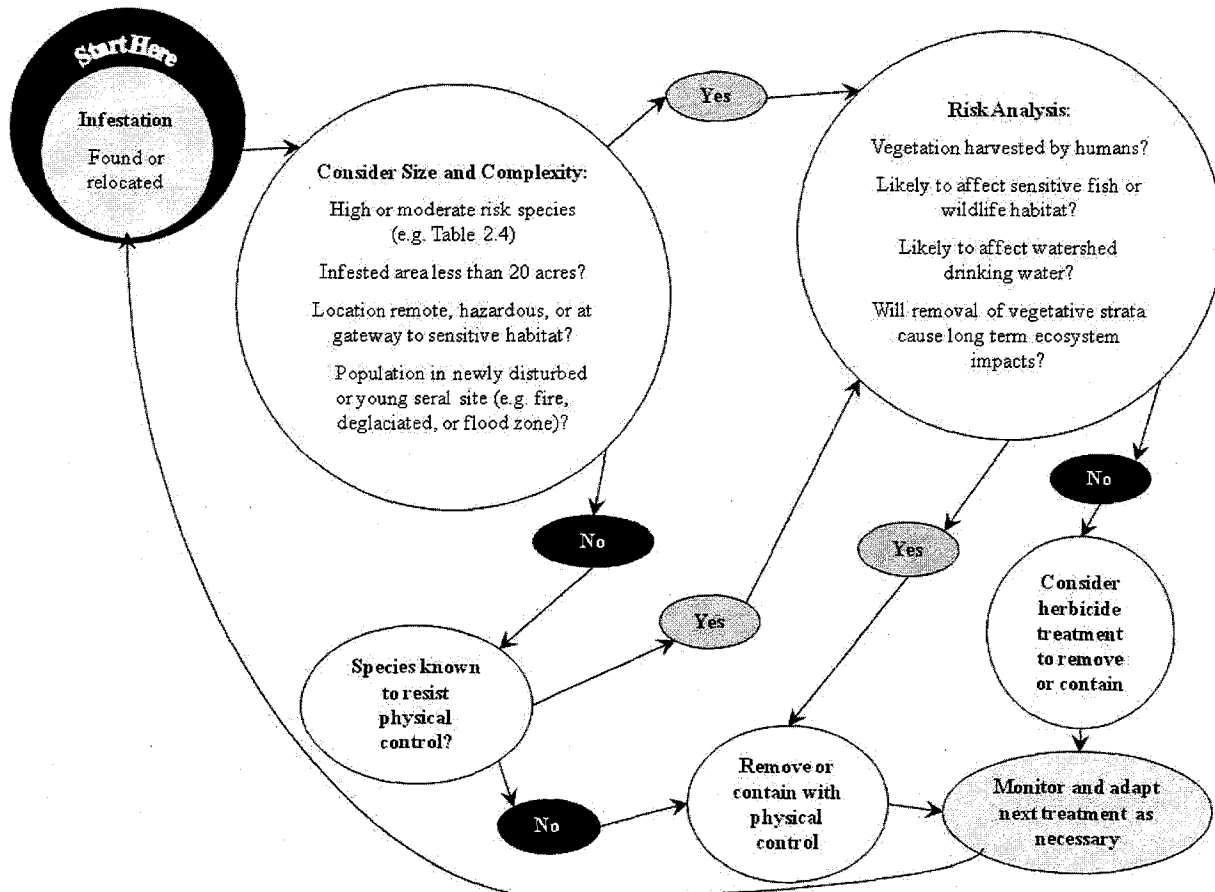


Figure 1. Integrated Pest Management Decision Tree

Prevention Measures

To reduce the possible introductions of invasive plants from outside or the spread of existing invasive plants within Alaska NPS units, the following best management practices will be implemented when feasible and practicable for ground-disturbing operations conducted in Alaska parks:

- Equipment used in ground-disturbing operations will be cleaned of soil, mud, and debris and inspected by park personnel before it enters parks.
- Fill materials including gravel, crushed rock, topsoil, and stockpiled project materials will be acquired from sources identified as free of invasive plants.
- Stipulate hay, straw, or forage used by the NPS and its contractors, commercial use operators in parks, or residents traversing and using rights-of-way granted by the NPS is weed-free, based on Alaska standards, if available.
- Equipment operators will avoid working in or moving equipment through infested areas. When this is not possible, equipment will be cleaned before leaving the area.
- Ground-disturbing projects will be monitored for invasive species for five years after project completion. See the EA Restoration section (2.5.5) for post-project revegetation measures to minimize colonization success.

Education

The NPS Invasive Plant Management program will inform employees annually or as needed of the problems caused by invasive plants, how to prevent infestations, and how to assist with the park's documentation, reporting, control, and educational efforts.

The NPS will inform local residents that certain garden plants may spread beyond the originally planted area and may become a nuisance to their neighbors, including parks. The educational program will also encourage park neighbors to use weed-free straw, hay, and other animal forage.

An objective of the NPS Invasive Plant Management Program is to inform employees, local residents, and park visitors about the problems caused by invasive plants and provide steps individuals can take to minimize those impacts.

Collaboration

The NPS will work with other agencies to promote and coordinate invasive plant management across Alaska in the Alaska Committee for Noxious and Invasive Plants Management (CNIPM). Individual park units will become or remain involved in Cooperative Weed Management Areas across the state, groups dedicated to working across boundaries to prevent the widespread establishment of invasive plants in Alaska.

The NPS is authorized to enter into cooperative agreements with adjacent landowners to address invasive plants on their land because nearby invasive plant infestations may threaten park

resources over the long-term. The NPS will enter into such agreements in Alaska where high-risk plants occur near park units and funding allows.

Herbicide Use Best Management Practices

A wide range of best management practices will be implemented to ensure legal, safe, and responsible herbicide use (see Appendix H in revised EA). These practices include specific prescriptions for applications, regulations and record-keeping, notification, and evaluation of and adaptation to groundwater vulnerability.

Restoration

Where infestations larger than 0.1 acre are controlled, the NPS will restore the site with local seed source and/or healthy native vegetation. Smaller controlled areas would be restored where invasive plants persist nearby or a substantial seedbank of invasive plants exists at the site. Seeds of pioneer native plant species will be collected in park units with large infestations, processed, and sown following the example of restoration work in Denali National Park and Preserve.

Historic Properties Protection Measures

When there is a specific site and consideration of removal methods, the park superintendent in consultation with appropriate staff (including a cultural resource specialist) will evaluate the area of potential effect to determine if an exotic or invasive species may be a historic component of a cultural resources property. Once a specific plant eradication site has been identified and appropriate removal techniques have been determined, the park superintendent in consultation with staff will evaluate whether or not an exotic or invasive species is a contributing historic component of a cultural resources property.

RATIONALE for the DECISION

Alternative B (Adopt the Invasive Plant Management Plan with a Decision Tree) will satisfy the purpose and need for the project better than the no-action alternative. Conventional physical control methods would be used first, where effective, and chemical control methods would only be used where determined safe with regards to wildlife and fish, water quality, and human health. The targeted and surgical use of a limited set of herbicides to control invasive plant infestations in Alaska National Park System units would be an effective use of limited resources and funding to control invasive plant infestations that could not be controlled with conventional manual and mechanical control methods. The environmental effects of alternative B will result in no more than minor adverse impacts to Alaska park resources and values.

SIGNIFICANCE CRITERIA

The preferred alternative will not have a significant effect on the human environment. This conclusion is based on the following examination of the significance criteria defined in 40 CFR Section 1508.27.”

(1) 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.

The EA evaluated the effects of Alternative B on aquatic resources and fish, cultural resources, human health and safety, soils, subsistence, vegetation, wetlands and floodplains, wilderness and scenery, and wildlife and habitat. As documented in the EA the effects of the proposed action would range from negligible to minor depending on the resource or value, and the effects could be beneficial in some cases. The short-term adverse effects of herbicides used to reduce or eliminate unwanted invasive plants will be outweighed by the long-term beneficial effects on native plant species and ecosystem integrity, wetlands and floodplain functions, wildlife habitat, and wilderness values. There would be no significant restriction of subsistence uses.

(2) The degree to which the proposed action affects public health or safety.

The selected alternative would have no more than a minor effect on public health or safety. Trained and certified herbicide applicators would use best management practices on relatively small areas with low toxicity chemicals, and public notifications would minimize any possible unwanted exposures and adverse health impacts.

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

The proposed and future invasive plant control locations would avoid removal of historically important plants, and herbicide impacts to cultural sites would be minimized through NHPA Section 106 reviews. The EA evaluated the effects of invasive plant control efforts and concluded that the impacts on wilderness would be minor. Invasive plant infestations along wild and scenic rivers or in wetland areas are rare, but control of these species would preserve their natural scenic qualities and wetland functions. Invasive plants are not yet known to occupy ecologically critical areas in Alaska park units.

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

The effects on the quality of the human environment would not be highly controversial. The NPS originally distributed the EA to 71 agencies, organizations, and individuals for public review and posted the EA on the NPS PEPC web page. Nineteen comment letters or emails were received, some with detailed comments. The NPS responded to comments and revised the document to address concerns raised on the initial EA, and distributed the revised EA for a second public review period. Nine parties submitted comments on the revised EA, but none of the public comments on either edition of the EA resulted in changes to the conclusions on the impacts of the alternatives. The environmental analysis concluded that the Invasive Plant Management Plan, using an adaptive management approach guided by a decision tree to allow a range of treatments, would have negligible to minor impacts on park resources or visitors to NPS units in Alaska.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The invasive plant management program focuses on use of physical treatment methods, which pose minimal risk to park environments or humans. The NPS consulted USFS risk assessments for the various proposed herbicides and concluded the limited extent and methods of possible future herbicide applications would pose negligible risks to the park environments or human health and safety.

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

This program does not set a precedent in Alaska, where herbicides have been used to control invasive plants in urban and agricultural settings, or for the NPS, which has used herbicides to control invasive plants in all other regions of the United States. The response to any infestation is based on the evaluation of the situation and effectiveness of the selected response methods. The use of herbicides would only occur where needed to control an infestation and where impacts to park resources and values or human health and well-being are judged to be negligible or insignificant.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The EA considered all past, present, and reasonably foreseeable impacts to the subject resources and values in Alaska park units including the effects from mining, development from various construction proposals, concession operations and facilities, roads, ORV uses, airstrips, and climate change. The effects from these other impact agents are generally much greater than the ongoing or proposed invasive plant management effects. The additive effects from invasive plant management control activities will be minor and will not result in cumulatively significant adverse effects to the evaluated resources and values.

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

The selected alternative would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places.

(9) 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 alternative would not adversely affect an endangered or threatened species or its habitat.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The selected alternative would not violate any Federal, State, or local law or requirements to protect the environment.

FINDINGS

The levels of adverse impacts to park resources anticipated from the selected alternative will not result in an impairment of Alaska NPS unit resources that fulfill specific purposes identified in the establishing legislation or that are essential to the natural or cultural integrity of these park units.

The selected alternative complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 11988 and 11990. There will be no restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

The National Park Service has determined that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

NPS RESPONSES TO PUBLIC COMMENTS and ERRATA

for the Environmental Assessment on the

NPS Alaska Region Invasive Plant Management Plan, Revised October 2009

The NPS received comments from nine parties in October and November 2009 on the revised Invasive Plant Management Plan Environmental Assessment (IPMP/EA), which was issued on October 1, 2009. The commenting parties included the State of Alaska (SOA), Ahtna Corporation (AHTNA), Alaska Survival, (AS), Citizen's Advisory Commission on Federal Areas (CACFA), the National Parks and Conservation Association (NPCA), Copper Country Alliance (CCA), Kodiak Soil and Water Conservation District (KSWCD), Becky Long (BL - and affiliated with AS), and Denis Ransy (DR). The NPS responses address only comments that judged to be substantive, which point out factual errors in the EA, suggest changes the proposed action or a reasonable alternative not covered by the EA, or incomplete or erroneous analysis of impacts.

SOA #1: While thresholds for physical control are identified in Table 2.4, how or if these thresholds will be used is not apparent in the decision tree. The chart allows the manager to make a determination on whether the size of an infestation is less than 20 acres; however, the thresholds identified in Table 2.4 have more detailed information regarding the size of an infestation and how it should be controlled. We suggest using these thresholds within the decision tree or providing an explanation for using 20 acres in lieu of the other thresholds.

NPS Response: *The 20 acre infestation threshold for herbicide treatment was developed in response to public concerns over the large scale use of herbicides in a concentrated area – thus leading to a greater risk of off-target movement. A list of current weed infestations larger than 20 acres can be found in Table 2.1 on page 2-2 of the Revised EA. The species in these >20 acres infestations are generally considered to be less aggressive species (dandelions, plantain, pineappleweed, etc). Luckily, NPS lands do not currently have >20 acre infestations of the more aggressive species, such as yellow toadflax, oxeye daisy, or Japanese knotweed. Therefore, these smaller infestations of more aggressive species can be targeted with herbicide treatments.*

SOA #2 (NPCA & BL): The decision tree incorrectly references Table 2.3 for a definition of high and moderate risk species. This risk is defined in Table 2.4.

NPS Response: *The decision tree has been modified to include the proper reference. This is corrected in the errata.*

SOA #3: The Special Analysis section of the decision tree includes questions to guide land managers in determining if they should consider herbicide use or continue physical control. The tree asks if the infestation is: 1) likely to affect watershed drinking water, and/or 2) located in sensitive fish or wildlife habitat. If both the answers are no, herbicide use is considered. If either answer is yes, the tree guides

the manager to continue manual treatments. Considering certain infestations are common in riparian areas (e.g. reed canarygrass and Japanese knotweed) and are appropriately managed with herbicides in most situations, the intent to not allow consideration of herbicide treatment is problematic. The issue could be resolved by renaming the special analysis bubble as herbicide risk or use analysis. The previous decision tree included consideration of “herbicide risk to human/wildlife health or water contamination.” Potential chemical impacts to wildlife and water are then considered before finalizing the decision to use herbicides.

NPS Response: *The Special Analysis portion of the Decision Tree has been renamed Risk Analysis and the sensitive habitat description has been edited. Please see the errata.*

The NPS disagrees with this statement on two points:

- 1) *In the Special Analysis, now Risk Analysis, section the decision tree states “Likely to affect watershed drinking water.” If we were to treat with aquatically approved herbicides the relatively small infestations of reed canary grass or Japanese knotweed, taking into account all of the BMPs listed in Appendix H of the Revised EA, there would little to no risk of affecting drinking water quality on a watershed scale.*
- 2) *If the infestation to be treated is located in fish or wildlife habitat that is sensitive to the herbicides proposed for use then either a less sensitive herbicide or more specific application method would be selected or manual control methods would be utilized.*

SOA #4: Table 2.4, which identifies risk to service lands as well as other factors, is confusing. It is unclear whether the column identifying risks as low/medium/high is associated with the information below it. We assume so, but the column arrangement leads to some discrepancies because multiple species would be placed in the incorrect columns. For example, creeping buttercup and bigleaf lupine ranks as 54 and 55, respectively, making them a medium-risk species and not a high-risk species as indicated. White sweetclover ranks as 81, making it a high risk species instead of medium. The table needs to be revised, possibly by separating the information into two tables.

NPS Response: *Table 2.4 has been modified to remove the row describing levels of risk to NPS lands and focus only on response to physical controls and invasiveness rankings and areas. This is corrected in the errata.*

SOA #5: If the NPS intends to add surfactants to these aquatic-labeled herbicides, we request the plan reference *Appendix H – Summary of federal and State Compliance Measures*, which indicates the Washington State-approved adjuvant list will be used when adding surfactants to chemicals.

NPS Response: *The NPS has added specific reference to the use of Washington State approved adjuvants only to Section 2.5.4 on page 2-15. This is corrected in the errata.*

SOA #6: When preparing annual work plans, we request the Service schedule treatments to avoid conflicts with subsistence and other public uses. The greatest potential for conflict exists near trails and roadways from May to September.

NPS Response: *The NPS agrees the greatest potential for conflicts with park subsistence users would occur near trails and roadways because that is where most of the invasive species infestations occur and these facilities provide the greatest access for people. The NPS will post on a web page proposed herbicide treatments by April 30 each year and make that known to potentially affected communities through local postings and mailings. The NPS will conduct local consultations with subsistence and other park users when requested to avoid or minimize conflicts. The NPS will post treatment areas during herbicide applications and for a reasonable period of time after the applications. Applicators will be trained, and there will be no direct spraying onto any people and minimal if any exposure. Furthermore, most applications will be direct spot applications onto targeted invasive plants or wand spraying over these plants under conditions with minimal air movement so that drift beyond the target application sites would be minimal or none.*

SOA #7: Although the EA references several sources in regard to the affected subsistence environment, the ANILCA Section 810 discussion is silent regarding subsistence uses. There is no analysis in the 810 supporting the general conclusion that the proposed action is not expected to affect subsistence uses. We recognize that some of the analysis may be in other parts of the EA, but the information is scattered, making it difficult to assess.

NPS Response: *The ANILCA 810 incorporates by reference the EA and its analyses on subsistence uses and resources (fish, wildlife, and plants) and human health and safety. In particular we refer the State to EA sections 3.6, and 4.7 on subsistence, but also to sections: 3.2 and 4.3 on aquatic resources and fish; 3.3 and 4.4 on cultural resources; 3.4 and 4.5 on human health and safety; 3.7 and 4.8 on terrestrial vegetation; and 3.9 and 4.11 on wildlife and habitat. The analysis and conclusions in section 4.7 indicated the invasive plant management plan could result in short-term small and minor restrictions to subsistence activities where herbicides are applied so as to protect human health and safety, but these access restrictions will not be significant in terms of size and time and will be preceded with notices to coordinate with local communities. Ultimately the action plan will result in long-term protection of natural and healthy wild populations of subsistence resources and uses such that wild populations will not be a) reduced or b) redistributed, and c) habitat will not be lost to invasive plant infestations. The proposed action will not result in any significant competition for subsistence resources on national park system lands in Alaska.*

SOA #8: The 810 discussion does not recognize state management of fish and wildlife, including harvest for subsistence purposes. Statewide regulations apply unless specifically superseded by federal law.

VIII

NPS Response: Page A-9 of the 810 indicates "Access for Title ~~XI~~ subsistence within NPS areas is permitted according to Federal and State law and regulations." NPS does not deny the potential applicability of State law or regulations to subsistence activities in national preserves.

AHTNA #1: Keeping wildlife away while treating invasive plants with herbicide should be conducted to protect them from harm. Precaution near stream and lakes and other water bodies while using herbicides should be done, and should be done only when absolutely necessary to eradicate plants.

NPS Response: Most treatment sites are located in the front country areas of parks, where wildlife populations are lower to begin with. Combine this with the treatment of weed species that are unpalatable or not preferred browse, the overall home range of wildlife species, the small areas proposed for treatments, and herbicides application rates from the lower end of that listed on the label suggests that it would be highly unlikely that any animals would be exposed to enough herbicide to cause any ill effects.

The NPS agrees that all precautions should be taken around water bodies during herbicide use. Only aquatically approved herbicides and adjuvants would be use in aquatic situations, and any herbicide applicator would either have the full State of Alaska pesticide applicator certification or the Federal pesticide applicator certification.

AS #1: The EA excuses the NPS from a discussion on how the proposed herbicides may affect humans by saying it has addressed the adverse effects by providing for posting. Posting as a deterrent is an imperfect tool at best and does not guarantee absence of exposure or harm. AS has asked NPS to disclose in a discussion what the possible harmful effects would be from spraying on people who are pregnant, immune-compromised, and chemical sensitive. This has not been done.

NPS Response: The EA summarizes the potential human health risks and effects in Sections 4.5.2 and 4.7.2, effects to human health and safety and subsistence, respectively. These analyses incorporated potential health effects and risk assessments from various sources, including Oregon State University and Interotx Inc. fact sheets in the Washington State Department of Transportation Integrated Vegetation Management program and the U.S. Forest Service risk assessments for the proposed herbicides on human and ecological health.

The NPS will post areas as closed to public access during herbicide applications and for a reasonable period of time after the applications, so there should be no direct spraying onto any people and minimal if any exposure. Furthermore, most applications would be direct spot applications onto targeted invasive plants or wand spraying over these plants under conditions with minimal air movement so that drift beyond the target application sites would be minimal or none.

AS #2: The EA fails to provide a single example of a successful and permanent removal of these invasive plants without the constant use of herbicides. Despite the use of herbicides for invasives in the U.S. for more than 50 years, there are no examples given where there has been long-term sustainable success in eliminating invasives anywhere and particularly none where the annual use of herbicides is not expected to be needed indefinitely.

NPS Response: *The Revised EA includes information on successful effective control strategies using herbicides in Section 4.8.2 on pages 4-40 to 4-42. There are numerous additional successful invasive plant treatment examples. For a listing of just a few, see the National Invasive Species Information Center website: www.invasivespeciesinfo.gov/news/success.shtml.*

AS #3: All discussions of effect concentrate entirely on small amounts of a single herbicide in discrete localities, rather than addressing the plain reality that more and more herbicides will be needed to control the increasing invasion of non-native plants in the parks on a yearly basis. The cumulative effect of the expected chemical use and the combination of possible chemicals which may be used MUST be considered here. The public has a right to consider the full effect of this action which is just the first phase of a plan that fully anticipates that any number of different herbicides will increasingly be needed over the coming years to meet the goals that NPS has set to eliminate invasives.

NPS Response: *If management continues as the NPS treatment trend suggests and the agency is allowed to act promptly, we anticipate, as stated in the EA, needing to treat an extremely low number of acres with herbicide (refer to Table 2.3 on page 2-6 of the Revised EA).*

It should also be noted that we are not proposing the use of "any number of different herbicides." The exact list of herbicides proposed for use is found in Table 2.6 on page 2-10 of the Revised EA.

AS #4: Noting that other parks and other agencies have applied herbicides does not provide either justification for the use of herbicides here, or proof of no harmful effect. All evidence shows that groundwater and surface water is contaminated by some of these very chemicals in other place, and that wildlife is affected in those areas. The EA fails to address how, in Alaska, this very likely effect will be avoided. Saying that the label instructions will be followed and that applicators will be trained does not provide any assurance that contamination will be avoided unless NPS can show that it was by not following the label and by not training applicators that caused contamination of groundwater and surface waters in other areas where these chemicals were applied.

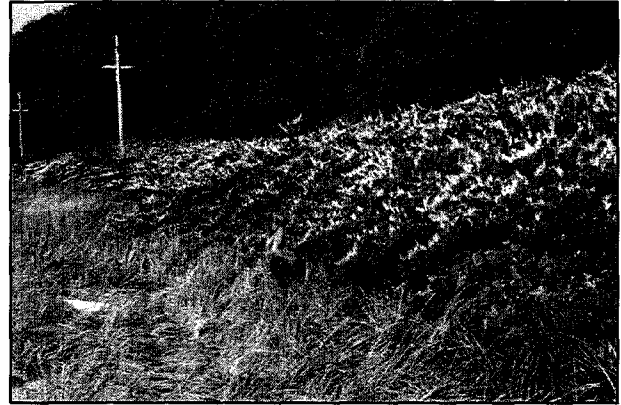
NPS Response: *There are areas in the United States where groundwater or surface water contamination has occurred even when the herbicide is used according to label. However, these situations are primarily agricultural based and are a result of applying the herbicide in a broadcast manner, usually aerially or through irrigation systems, over large areas. Additionally, the herbicides usually found in groundwater contamination (alachor, atrazine, bromacil, diuron, and simazine) are agricultural use herbicides and are not proposed for use here (<http://pubs.usgs.gov/circ/circ1225/html/common.html>). The exact list of herbicides proposed for use is found in Table 2.6 on page 2-10 of the Revised EA.*

AS #5: The EA, and the Attachment A, make broad statements that have no scientific support, such as "after habitat destruction, invasive species are the second greatest threat to diversity". This is an opinion, not a fact by any means, nor is it supported by any evidence. It is this kind of jargon that fills the EA, rather than giving us actual examples of areas similar to Alaska parks where native species have been wiped out by invasives, or where the natural resources of the parks have truly been impaired.

NPS Response: *Actually, this is the whole point of this plan. There are areas of Alaska that are beginning to see the effects of these species. Two examples can be seen in the pictures below.*



White sweetclover infestation along the Stikine River



Bohemian knotweed in southeast Alaska

The point is that our park lands do not look like this. We are proposing the use of herbicides so we have another tool in our toolbox to help prevent Alaska parks from being overrun, as illustrated.

AS #6: The EA, even with the addition of Attachment A, does not list the possible chemical formulations that are expected to be used. “Other formulations” does not give the public anything specific to make comments on. It forces us to guess and try to make comments on some unnamed “possibles”.

NPS Response: *The NPS lists all of the active herbicide ingredients and the possible herbicides with those ingredients in Table 2.6. The Revised EA notes in several locations, notably page 2-7, the incorporation by reference the US Forest Service risk assessments for these herbicides.*

These assessments consider the impacts on human and ecological health of various formulations with the active ingredients. The assessments are long and detailed and present far too much detail for the NPS to include in the EA, hence the incorporation by reference.

AS #7: NPS refuses to commit to monitoring of residual herbicides in the soil and water, and offers monitoring only for the purpose of determining efficacy. Certainly the persistence and mobility of the chemicals is as important a factor in protecting the quality of our parks as determining whether plants were killed or not.

NPS Response: *For each herbicide application, the NPS will monitor the efficacy (control effectiveness) of the application to remove the target invasive species and to measure damages to non-target species. Newton, et al. 2008 studied herbicide dissipation at several sites in Alaska and showed that herbicide residuals dissipated to close to or below detection limits within a 14 months period – and this was based on an herbicide application that was twice the normal rate and applied with a hand held boom sprayer. We plan on applying herbicides at the lower application rates and in a selective manner with a backpack sprayer or wipe/wick application to reduce off-target impacts. The USDA Agricultural Research Service in Alaska recommended bioassays as an option (Steve Seefeldt, pers. com.) and agreed that it would not be*

effective to test for herbicide persistence on such small treatment areas, specific treatment methods, and reduced application rates. .

BL #1: There are 21 infestations of non native plants over 20 acres that are not considered for vegetation management treatments. An important question to ask is if herbicides are brought into use for smaller areas, is this perhaps the future treatment for these larger areas?

NPS Response: *As clearly stated in Section 2.4.3 on page 2-7 of the Revised EA – “Infestations greater than 20 acres in size would only be treated in a containment approach. A containment approach allows for strategic treatment of the outlying or perimeter portion of the infestation, with the intention of halting the advancement of the target infestation towards uninfested significant resource areas or high-use, vector (gateway) locations.” This containment may occur with manual or herbicide treatment but would only be utilized along the perimeter of the infestation.*

BL #2: If alternative two herbicide use eradicates plants to the satisfaction of the land managers, but then the weeds are reestablished by ecosystem disturbances, does the herbicide use then continue?

NPS Response: *It is possible that a new weed species could invade in areas which have been treated with herbicides. This possibility would be minimized by three items:*

- 1) In Section 2.2.1 on page 2-1 of the Revised EA, there is discussion of invasive weed survey and monitoring. Given this inventory program, any new weed infestations would be detected when they are still relatively small and could be controlled using manual methods or a single spray of herbicide. We think early detection and rapid response would help keep treatment areas low and possibly result in no herbicide treatment in some years during the next decade.*
- 2) In Section 2.5.1 on page 2-14 of the Revised EA, there is a list of best management practices to help prevent the introduction of weed species to areas of ground disturbance. These practices will help to reduce the amount of invasive species introduction into the parks. The NPS is working to ensure that even maintenance procedures prevent invasive plants, such as weed-free materials and all equipment needs to be pressure-washed and inspected prior to arrival*
- 3) In Section 2.5.5 on page 2-15 of the Revised EA, there is discussion of restoration practices with native species. The establishment of healthy and diverse native plants will help ensure longer-term protection against repeated invasion*

See also the NPS responses to AS #3 regarding herbicide treatment in future years.

BL #3: Mentioning the dynamics of climate change as part of the cumulative environmental impacts is not the whole story. THE EA MISSES THE POINT. The point is that the ecosystems are changing which means the makeup of the plant communities will change. When do invasives become native? When do we accept the establishment of a new plant species as a range shift due to climate change and human caused disturbance?

NPS Response: *The NPS acknowledges that climate changes could very well increase the range of plant species and change plant communities in areas throughout Alaska. Plant succession after glacial retreat*

is natural with local native species, which have filled those niches for decades, as in Glacier Bay National Park & Preserve. The invasive species we are dealing with are primarily native to Eurasia and have been introduced to the United States relatively recently. The growth of these Eurasian species in North America is not considered a natural range expansion due to the fact that they are native to an area on the opposite side of the earth rather than merely a few hundred miles away.

BL #4: This EA process has never acknowledged the controversiality of herbicide use in Alaska. This cannot be overlooked.

NPS Response: *The NPS disagrees with this comment. The NPS initiated and analyzed potential effects of the alternatives under NEPA in large part because of the high level of interest in herbicide use in Alaska. The NPS values the public involvement process and went to great lengths to carefully consider a range of viewpoints on this topic. The public scoping meetings, the use of an EA rather than a categorical exclusion from NEPA analyses, and two public comment periods on the EA all point to the fact that we are very cognizant of the wide range of opinions on this topic and the need to hear from every view point.*

BL #5: The NPS EA concludes from this study [Tilsworth et al. (1991) study on triclopyr persistence and migration] that there was no lateral movement of triclopyr because no detectable residues in the application zone and the immediate area were found. But there was lateral migration off site which makes this statement inaccurate.

NPS Response: *The NPS disagrees with this comment. The EA section 4.6.2 on impacts to soils correctly reported that triclopyr did not appear to move laterally in soil; it did not discuss the movement of triclopyr in plant roots in this section, which is what the commenter is referring to. The Tilsworth study found triclopyr in all sites after one year, but only at concentrations greater than one part in a million at one site. Very low levels of triclopyr leached to 3-foot soil depths, and little to no triclopyr is expected to reach ground water, depending of course on the depth to ground water. The table in Appendix G on page G-1 of the Revised EA clearly states that "Triclopyr is active in the soil and absorbed by plant roots."*

BL #6: [The Newton et al. (2008) study] This study was done to broaden understanding, but I do not believe the data is there to support the conclusion of low toxicity and low mobility, consistent dissipation and no observable risk to wildlife or humans. The limitations of the study are: data for only 11-14 months, no soil temperatures for the Windy Bay Site and only soil temperatures for Fairbanks in the summer, and no attempt to determine half life of the herbicides. It is interesting to note that this study states there was vertical movement of 15 to 45 cm soil depths for glyphosate and triclopyr. The study calls it minor, but I call it significant. Although the study calls it exceptions, 6-14% of initial concentration of triclopyr was found at two Fairbanks sites and less than 1% of triclopyr at Windy Bay at day 120 after treatment. There was also traces of triclopyr found in aspen suckers on Fairbanks upland sites after an extended period, which it is stated are likely attributable to absorption into stems or uptake from rained-on soil relatively soon after application, followed by immobilization in dying plants. I

also want to note that the Torstensen and Stark (1982) study in Sweden which is quoted for its triclopyr data did not report soil temperatures.

NPS Response: *The NPS disagrees with this comment. It is important to note that the Newton et al. study applied the herbicides at twice the normal application rate. Even with twice the amount of herbicide the study concluded that within one year after application that “residues were at or near detection limits.”*

BL #7: I take exception to the statement that glyphosate and surfactants do not bioaccumulate in fish. The US Fish and Wildlife Service stated regarding the proposed aerial application of glyphosate in Southeast AK in a letter to ADEC dated 10/28/05 that Accord does not appear to be an acceptable product due to its potential for aquatic toxicity. The Agridex surfactant in Aquamaster has chemical properties that enhance the toxicity of glyphosate because the petroleum based compound carries the herbicide more effectively into biological systems and across cell membranes.

NPS Response: *We could not find reference to the USFWS letter stated above. In the ADEC Responsiveness Summary on this southeast Alaska aerial application project (<http://www.dec.state.ak.us/eh/docs/pest/RespsumMarch2006.pdf>) there is mention of USFWS concerns over eagle nests in proximity to the treatment area but not aquatic toxicity concerns.*

According to the USFS report Effects of Surfactants on the Toxicity of Glyphosate, with Specific Reference to RODEO (<http://www.fs.fed.us/foresthealth/pesticide/pdfs/Surfactants.pdf>), Agridex has a LC₅₀ of >1,000 mg/L, which makes it essentially not toxic to fish at the application rates NPS would use and puts it in the Insignificant Hazard category.

BL #8: On April 15, 2009, EPA ordered pesticide manufacturers to test 67 chemicals to determine if they disrupt animals and human endocrine system. Glyphosate and 2-4-D are two of the chemicals in the Tier 1 screening. The EPA Endocrine Disruptor Screening Program process will take about 3 years for a final determination on the chemical effects on hormone disruption.

NPS Response: *The NPS will follow all guidance put forth from the EPA regarding this program. According to the EPA Endocrine Disruptor Screening Program website (<http://www.epa.gov/endo/index.htm>) and the Federal Registrar notice of the final list of active ingredients to be screened, the list of active ingredients “should not be construed as a list of known or likely endocrine disruptors. Nothing in the approach for generating the initial list provides a basis to infer that by simply being on this list these chemicals are suspected to interfere with the endocrine systems of humans or other species, and it would be inappropriate to do so.”*

CACFA #1: A minimal herbicide use standard, especially when public or subsistence users could be affected, should be applied. However, in some cases herbicides may be the most feasible option. A diligent monitoring program that tracks the long-term effect of herbicide use is a necessary component of any adopted plan.

NPS Response: *The NPS is committed to using herbicides in a manner that would have minimal impacts to native vegetation, wildlife, aquatic organisms, the public, and subsistence users. We will continue to monitor all invasive weed treatment areas, both herbicide and manual treatments, to document treatment efficacy; native plant and restoration responses; and any off-target effects.*

CACFA #2: Education and use of best management practices are essential to preventing new introductions and spread of invasive plant seeds or propagules. In addition to the educational and preventative measures described in Sections 2.5.1 and 2.5.2, active educational displays such as boot brush stations or similar mechanisms near areas of infestation or near park entrances may be appropriate. This would encourage the public and park employees to clean shoes or boots when moving from an area of infestation or when entering into the park, which in turn will help prevent satellite populations from emerging. It is possible that these types of displays already exist within the park and if they do, we commend the effort. . . . We also encourage collaboration on management objectives with the adjacent land owners.

NPS Response: *Weed prevention measures would be implemented for all ground disturbing operations. Park staff would also be encouraged to follow these measures through invasive weed education. Boot brush stations are available at several parks, outside of offices and visitor buildings. The NPS is working on increasing the availability of invasive weed information to park visitors through working with park interpretive staff, providing brochures and pamphlets to visitor centers, and leading invasive weed sessions with summer camp students. We have been and will continue to be active partners in the Alaska Committee for Noxious and Invasive Plant Management (CNIPM), Anchorage Cooperative Weed Management Area, Kenai Peninsula Cooperative Weed Management Area, and other local organizations dedicated to the control and prevention of invasive weeds.*

CCA #1: Please extend the post-application period for posting signs on site to one year. This is warranted because many herbicides persist for much more than one month, and people with horses or dogs should be warned. Since the sites will be monitored anyway, signs can be checked and, if missing, replaced. It might be useful to have some durable generic signs for post-application use; e.g., "This site has been treated with herbicides during the past year. For more information contact the National Park Service."

NPS Response: *The NPS will leave treatment postings up for the treatment season but due to accessibility issues the signs would be taken down at the end of the fall season prior to snowfall.*

KSWCD #1: Change [the April 30 herbicide use notification] to follow the State Pesticide Regulation for public notification and posting requirements OR at least a more reasonable management time-line such as 1 month before project. Keeping this at April 30 could potentially prevent an effective EDRR (Early Detection Rapid Response) if a new infestation was discovered after that date. It could also potentially delay treatment more than a year if an infestation were discovered in May and Best Management Practices recommends a fall application of herbicide.

NPS Response: *The April 30 notification is an attempt to improve communication with members of the public who are concerned about herbicide use and exposure. This, however, does not preclude the treatment of a newly discovered infestation as long as it can be treated as determined by the Invasive*

Plant Management Decision Tree. In this case the notification will follow the State Pesticide Regulation of 1 month. Any new treatment areas will also be posted at park visitor centers and updated on the Alaska Exotic Plant Management Team website - <http://www.nps.gov/akso/NatRes/EPMT/index.html>

ERRATA TO THE IPMP EA

Page 2-5, Figure 2.1 Invasive Plant Management Decision Tree:

In the bubble with header “Consider Size and Complexity”, the high or moderate risk species are defined in table 2.4, not table 2.3, so the EA is hereby corrected and future reproductions of the decision tree will be corrected, as in the FONSI.

In the bubble with header “Special Analysis”, the header has been changed to “Risk Analysis” and the fish and wildlife requirement changed from “In sensitive fish and wildlife habitat?” to “Likely to affect sensitive fish and wildlife habitat?” The EA is hereby corrected and future reproductions of the decision tree will be corrected, as in the FONSI.

Page 2-8, Table 2.4 Consideration for selecting physical and herbicide control methods:

There has been confusion as to the comparison of the “Risk to NPS Lands” ranking versus the invasiveness rankings in Appendix B. To clarify this information the “Risk to NPS Lands” category has been removed from the table. The EA is hereby corrected and future reproductions will be corrected, as in the FONSI.

Page A-1, Appendix A – ANILCA 810 Subsistence Evaluation and Finding:

We append to paragraph one in the introduction of this analysis: “This evaluation and finding incorporates by reference the body of the attached environmental assessment for the invasive plant management plan, particularly section 3.6 describing subsistence resources and uses and section 4.7 on impacts to subsistence resources and uses.