



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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11 March 2014

Kodiak National Wildlife Refuge (Refuge) has prepared a preliminary Supplemental Environmental Assessment (SEA) regarding the management of invasive plants. The proposed action described in the attached SEA document would adopt in part and supplement the Environmental Assessment for the Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity, finalized by the U.S. Fish and Wildlife Service in November 2010. A copy of the 2010 EA may be requested from the Refuge via phone (1-888-408-3514) or mail. Alternatively, this document may be accessed via the internet at:

http://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kodiak/PDF/ea_ipm_kodiak.pdf

We present two alternatives in the SEA: (1) no change to the 2010 EA (no action alternative), and (2) adopt minor amendments to the 2010 EA (proposed action alternative). Under the first alternative, the Refuge would simply continue its current Integrated Pest Management (IPM) approach to management of invasive plants as described in the 2010 EA. IPM, as defined by the Fish and Wildlife Service (Service) is “a science-based, decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species and the environment and preventing unacceptable levels of pest damage”. Under the second alternative, the 2010 EA would be amended to increase the scope of land ownership types eligible for IPM support by the Refuge or Service conservation assistance programs (Partners for Fish and Wildlife, etc.); clarify Refuge IPM priorities; permit Service-led IPM activities on private land, Alaska Native, and other federal lands where permission was granted by the landowner; and remove a voluntary restriction on application of aminopyralid herbicide outlined in the EA. This proposed change would continue to ensure full adherence with requirements of the EPA-approved herbicide label.

We invite your review and comments on the SEA. The comment period is open now through April 10, 2014. Comments can be mailed to Bill Pyle at the Refuge address provided above, called in at (907) 487-0228, faxed to the Refuge at (907) 487-2144, or e-mailed to Bill at bill_pyle@fws.gov. If you have questions or need additional information, please contact Acting Deputy Refuge Manager Hansel Klausner at (907) 487-0248. We look forward to receiving your thoughtful comments.

Thank you for your interest.

Sincerely,

Anne Marie La Rosa
Refuge Manager

Preliminary Supplemental Environmental Assessment

Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity (November 2010)

March 2014

Prepared by

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1.0 Introduction

In 2010, the U.S. Fish and Wildlife Service (Service) approved a strategy for management of invasive plant species at Kodiak National Wildlife Refuge ([USFWS 2010a](#)). An invasive species is an “alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health” ([Presidential Executive Order 13112](#)). The associated approval document, a Finding of No Significant Impact (FONSI), selected the preferred management alternative identified in a 2010 Environmental Assessment (EA) entitled “Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity” ([USFWS 2010b](#)). The 2010 EA specifically identified and targeted “highly invasive plants”, which includes a subset of non-native species found in the Kodiak Archipelago classified as having the highest potential to cause economic or environmental harm. Following the FONSI, the Kodiak National Wildlife Refuge (Refuge) implemented the program and gained experience with the strengths and limitations of the adopted strategy. During implementation we identified several small issues that hindered, and would continue to hinder, our ability to meet the management goals.

This document adopts in part and supplements the Environmental Assessment for the Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity, finalized by the Service in November 2010. A copy of the EA may be requested from the Refuge via phone (1-888-408-3514) or mail. Alternatively, the EA document may be accessed via the internet at: http://www.fws.gov/uploadedFiles/Region_7/NWRS/Zone_2/Kodiak/PDF/ea_ipm_kodiak.pdf

We present two alternatives in this Supplemental Environmental Assessment (SEA): (1) no change to the 2010 EA (no action alternative), and (2) adopt minor amendments to the 2010 EA (proposed action alternative). Under the first alternative, the Refuge would simply continue its current Integrated Pest Management (IPM) program and manage invasive plants as described in the 2010 EA. IPM, as defined by the Service is “a science-based, decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species and the environment and preventing unacceptable levels of pest damage” ([569 FW 1](#)). Under the second alternative (proposed action), the 2010 EA would be amended to increase the scope of land ownership types eligible for IPM support by the Refuge or conservation assistance programs of the Service (e.g., Partners for Fish and Wildlife, Tribal Wildlife Grant Program, etc.); clarify Refuge IPM priorities; permit Refuge-led IPM activities on private land where permission was granted by the landowner; and continue to apply aminopyralid herbicide according to label restrictions for invasive plant control but remove our voluntary restriction on application of this herbicide within 10 feet of water. This proposed change would continue to ensure compliance with requirements of the EPA-approved herbicide label.

We believe the changes proposed in this preliminary SEA would not significantly alter the analysis of impacts for any of the resource areas evaluated in the 2010 EA, nor would it result in any substantive changes in its approved action, and therefore we are not proposing to conduct a new environmental analysis. We believe the proposed amendment falls within the scope of analysis documented in the 2010 EA and that the potential impacts resulting from documenting these changes have been adequately evaluated in this EA and the associated decision document. The following presentation adheres to the outline of the 2010 EA. As appropriate, we describe proposed differences and present the rationales for those changes. Otherwise we incorporate information presented in the approved 2010 EA by reference ([40 CFR 1502.21](#)).

This preliminary SEA will be made available for public comment for a 30-day period. Comments received by the public, stakeholders, and agencies will be reviewed and considered. The Refuge will disclose its final decision and supporting rationale in a separate decision document.

1.1 Purpose and Need for Action

The overall purpose and need of the Refuge's invasive plant management is described in the 2010 Environmental Assessment and associated FONSI. Readers are referred to these documents for details. The purpose of this preliminary SEA is to implement tactical changes employed to maintain and increase the effectiveness of our invasive plant management strategy. The need for this action is based on the following factors identified during 2011-13 implementation of the current management strategy:

- We identified additional infestation areas that warrant immediate management action, and other areas that may warrant action in the future, but are outside the scope of the current EA. Specifically, the EA did not address management of infestations on Alaska Native owned lands and federal lands administered by the Federal Energy Regulatory Commission (FERC) inside the Refuge's legislative boundary; municipal, Alaska Native, and federal lands outside the Refuge's legislative boundary; and "critical control points" where risk is highest of inadvertent introduction of invasive plants to Refuge lands from places on non-Refuge lands that support commercial and non-commercial transportation activities. Risks posed by recently discovered invasive plant infestations prompted a need to include these areas in the scope of management, and to clarify how these changes would affect the Refuge's IPM priorities.
- The 2010 EA established a framework for Service support of IPM actions conducted by conservation partners on selected non-federal lands. A key provision of this framework was that landowner-approved IPM operations would be led by a conservation partner such as the Kodiak Soil and Water Conservation District (District). Although this approach has been successful, future progress may be limited where conservation partners do not have the necessary capacity (i.e., funding, personnel, infrastructure, etc.) to promptly conduct IPM [early detection-rapid response](#). Consequently, there is a need to

modify the current framework by allowing the Service to take the lead on IPM action where partner resources are unavailable and provided landowner permission.

- The 2010 EA made provision for use of two herbicides, aminopyralid and glyphosate, as options for IPM action where an infestation area harbored more than 10 highly invasive plants. Additionally, use of these herbicides may be permitted to control infestation areas of smaller size where non-chemical methods were determined to be infeasible; non-chemical methods were attempted but failed to eliminate invasive plants; and Service objectives for the area could be met while minimizing environmental effects. In the case of aminopyralid, the 2010 EA voluntarily prohibited herbicide application within 10 feet of water bodies, although this was allowed under the EPA label restrictions. There is a need to remove this voluntary restriction because manual removal was deemed impractical and ineffective, and because such a restriction on aminopyralid use is not mandated by the herbicide label or supported by the technical literature.

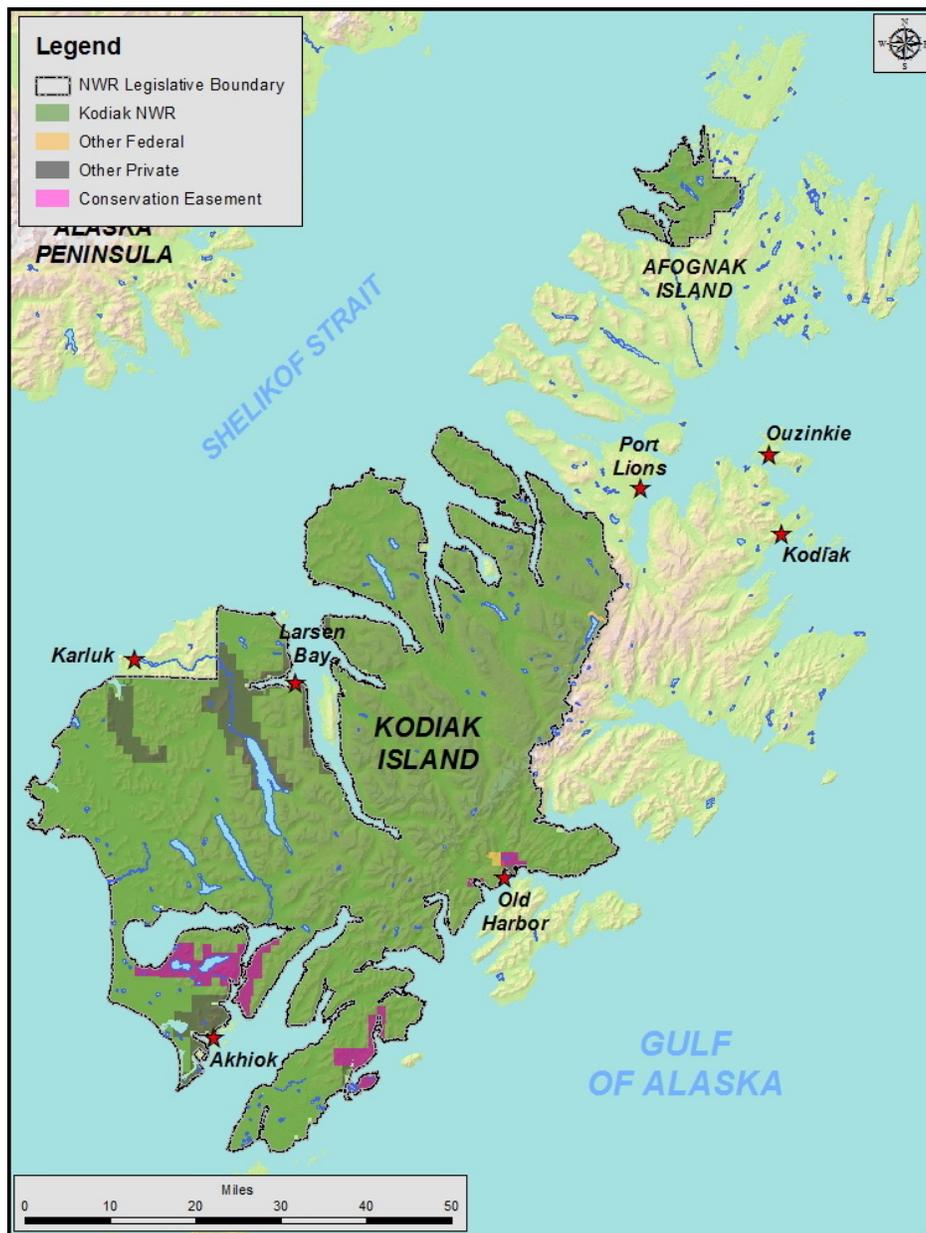
1.2 Background

The actions described in the EA were implemented immediately following issuance of the FONSI in November 2010. Most of the IPM efforts during winter and spring consisted of planning and coordination in preparation for field actions. Service Pesticide Use Proposals (PUP) were updated to ensure consistency with the EA for previously managed infestation areas. New PUPs also were prepared, reviewed and approved for infestation areas that had not previously received any IPM control action. IPM inventory surveys, outreach, and control actions occurred between May and October of 2011-2013. The Refuge led IPM field control efforts in infestation areas on Refuge lands and Conservation Easement lands (Figure 1). The Refuge and conservation assistance programs of the Service routinely supported IPM survey, outreach, and control plans and actions on private lands by conservation partners, especially the District. IPM actions conducted by the Refuge and conservation partners targeted the highly invasive species identified in the 2010 EA including orange hawkweed (*Hieracium aurantiacum*), oxeye daisy (*Leucanthemum vulgare*), Canada thistle (*Cirsium arvense*), creeping buttercup (*Ranunculus repens*), Bohemian knotweed (*Polygonum x bohemicum*), reed canarygrass (*Phalaris arundinacea*), and common tansy (*Tanacetum vulgare*). Results of quantitative and/or visual monitoring indicated that infestations subject to IPM control actions were consistently and substantially reduced. We gained additional IPM experience over the past several years as we implemented our strategy. During our evaluation of this information we identified some tactical limitations of the 2010 EA and, in response, have prepared this preliminary SEA.

1.3 Legal Authorities

Kodiak National Wildlife Refuge is required by law, regulation and policy to protect and conserve fish, wildlife, and plants while also ensuring that biological integrity, diversity, and environmental health are maintained. This preliminary SEA incorporates by reference, in accordance with 40 CFR 1502.21, the summary legal framework for management of invasive plants on Refuge lands in the Kodiak Archipelago described in the Refuge's 2010 EA.

Figure 1. General classes of land ownership in the legislative boundary of Kodiak NWR.



1.4 Issues

In February 2013, the Refuge notified the public, stakeholders, and agencies of its intent to prepare this preliminary SEA and requested input on a summary of the proposed action (Appendix A). For details on the scope of consultation refer to chapter 5. We received two comments; neither identified any issues of concern related to the proposed action. One comment voiced support for the proposed action and the other expressed concern about the adequacy of the public notification in the legal notices section of the local newspaper. We will increase the profile of the next public notification, which will consist of a notification of opportunity to review and comment on this preliminary SEA.

2.0 Alternatives

In this section, we present two alternatives. The first alternative would continue the current IPM approach described in the 2010 EA. The second alternative would amend the EA to include several tactical measures to increase effectiveness of the IPM approach. Refer to Table 1 at the end of this chapter for a comparison of these two alternatives.

2.1 Elements Common to Alternative 1 and Alternative 2

The two alternatives are nearly identical with exception of the elements described below in section 2.3 and referenced in Table 1. Under both alternatives, we would continue to manage invasive plants in accordance with the purpose and need, rationale, and methods identified in the 2010 EA. Moreover, the alternatives would not differ in the following primary elements:

- Integrated pest management principles;
- Cooperative relationships with conservation partners and the Kodiak Archipelago Cooperative Weed Management Area;
- Public outreach to increase awareness of the invasive plant threat;
- Inventory of invasive plants and monitoring of managed infestations;
- Types of allowed herbicides (limited to two), surfactant, and colorant;
- Legal and agency requirements pertaining to herbicide storage, use, transportation, and disposal; and
- Application of additional best IPM practices to maximize worker and public safety, as well as to minimize potential environmental impacts.

2.2 Alternative 1: Continue Current IPM Approach (no action alternative)

Alternative 1 would continue the IPM approach described in sections 2.2, 2.3 (non-herbicide IPM practices), and 2.4 (IPM including herbicide) of the 2010 EA, which are incorporated by reference (40 CFR 1502.21). Below we describe specific tactical

elements of the 2010 EA targeted for modification in Alternative 2, but which would not be modified if this Alternative [1] is adopted.

- The scope of primary Service-led IPM actions would be limited to federal lands of Kodiak National Wildlife Refuge and Alaska Maritime National Wildlife Refuge in the Kodiak Archipelago; properties administered by the Fish and Wildlife Service in Kodiak; and private land where the US has established a Conservation Easement with a Native Corporation, which conferred the Refuge with the right to access and manage habitat.
- Priorities would remain consistent with the 2010 EA: Refuge lands; Conservation Easement private lands; other private lands inside the Refuge legislative boundary; and private and state lands outside the legislative boundary.
- Conservation partners, especially the District, would continue to take the lead on management of invasive plants on private and state lands. Potential partner support by the Service would be limited mainly to funding or technical assistance. Where an IPM action included herbicide use, the partner would be required to fully comply with herbicide usage requirements identified in the 2010 EA.
- Use of aminopyralid herbicide would be voluntarily prohibited within 10 feet of water bodies including lakes, rivers, streams, and areas inundated by water.

2.3 Alternative 2: Amend Current IPM Approach (proposed action alternative)

Alternative 2 would amend the IPM approach described in sections 2.2, 2.3 (non-chemical aspects of IPM), and 2.4 of the 2010 EA. Specific tactical elements proposed for amendment follow.

- We would amend the scope of potential IPM operations to include the full scope of land ownership in the Kodiak Archipelago. The scope of the 2010 EA included most but not all ownership types. Specifically the amended scope would include Alaska Native lands outside the Refuge's legislative boundary and lands administered by all Alaska Native, municipal, and non-Refuge federal lands in the Kodiak Archipelago (e.g., Bureau of Land Management, U.S. Coast Guard, FERC). Correspondingly, the Service and/or Refuge may provide technical or financial support to IPM actions proposed and taken by conservation partners throughout the archipelago.
- We would revise the priority of IPM operations as follows with revisions highlighted by underline.
 - Federal lands administered by Kodiak NWR and Alaska Maritime NWR in the Kodiak Archipelago;
 - Private lands where Native Corporations have established Conservation Easements with Kodiak NWR;
 - Private, Alaska Native, and other federal lands within the legislative boundary of Kodiak NWR; and
 - Critical control points identified on private, municipal, state, Alaska Native, and federal lands outside the legislative boundary of Kodiak NWR.

We define critical control points as areas where priority survey and control action is warranted because they pose the highest potential for transmission of invasive plants to Refuge lands. For example, any documented area of infestation of highly invasive plants found on private land within the Refuge legislative boundary is considered a critical control point due to its proximity to Refuge lands. Critical control points would also include some non-Refuge areas such as transportation services (airports, floatplane bases, lodges, etc.); transportation corridors (e.g., ATV trails leading to Refuge lands); and areas that support concentrated activity by people that frequently access Refuge lands (e.g., Buskin River anglers, personnel temporarily stationed at agency bunkhouses in Kodiak, etc.). Infestations of highly invasive plants have been documented at a wide variety of critical control points on non-Refuge lands (see Figure 2 for example). It is highly likely that others exist but have yet to be documented. We expect that a focus on critical control points would substantially decrease the likelihood of introduction of highly invasive plants to Refuge lands from source areas located on non-Refuge lands.

- The Service could lead IPM actions on non-Refuge lands where the landowner granted permission, where control was critical to protecting Refuge lands, and where it was determined that conservation partners did not have the necessary resources (e.g., experience, personnel) to conduct the IPM action. This proposed change is important for two reasons. First, it would increase the probability that prompt IPM action would be taken by a conservation partner or Refuge to control documented infestations. The operational effect and cost-efficiency of management is greatest where it is executed soonest, consistent with the IPM principal of early detection-rapid response. Second, the Service has a demonstrated capacity and process to execute the full scope of IPM operations. Allowance for Service-led operations serves as a contingency in cases where there is a critical IPM need but partner resources are unavailable.
- All Service herbicide use will, by law, strictly conform to the herbicide product label. Since 2011, the Refuge and its partners have applied aminopyralid as a component of our IPM approach at a variety of infestation areas. We have met and exceeded requirements identified in the label. In its 2010 EA, the Refuge voluntarily adopted a restriction on application of aminopyralid within 10 feet of water. Following EA authorization we routinely applied this restriction where aminopyralid herbicide had been authorized as an IPM practice. We found that this practice substantially reduced our ability to manage and control highly invasive species of forbs where the infestation ranged near water. During 2011-13, infestations within 10 feet of water were left unmanaged because manual removal was deemed impractical, due to the size of infestations, limited manpower available for removal, and general ineffectiveness and impact associated with attempts to remove roots of perennial invasive plants such as orange hawkweed and creeping buttercup from soils supporting a thick sod mat and high density of plant roots.

The aminopyralid restriction we voluntarily adopted in the 2010 EA was modeled after a practice devised and implemented by the National Park Service at Yosemite National Park ([USNPS 2008a](#), [USNPS 2008b](#)). The need to continue to implement such a restriction is neither supported by the technical literature, nor identified in the herbicide product label. Specifically the label for Milestone™, an herbicide product with aminopyralid as the active ingredient, states permissible use in non-cropland areas to include "... seasonally dry wetlands (such as flood plains, deltas, marshes, swamps, or bogs) and transitional areas between upland and lowland sites". We interpret this statement to include terrestrial non-cropland areas adjacent to but not within water bodies, including seasonally dry wetlands and riparian areas.

2.4 Alternatives Considered but Eliminated from Analysis

None were identified.

Figure 2. Examples of critical control points in the Kodiak vicinity, Kodiak Island, Alaska.

Abbreviation conventions: ADF&G (Alaska Department of Fish & Game), FWS (Fish & Wildlife Service), HQ (Headquarters), KEA (Kodiak Electric Association).

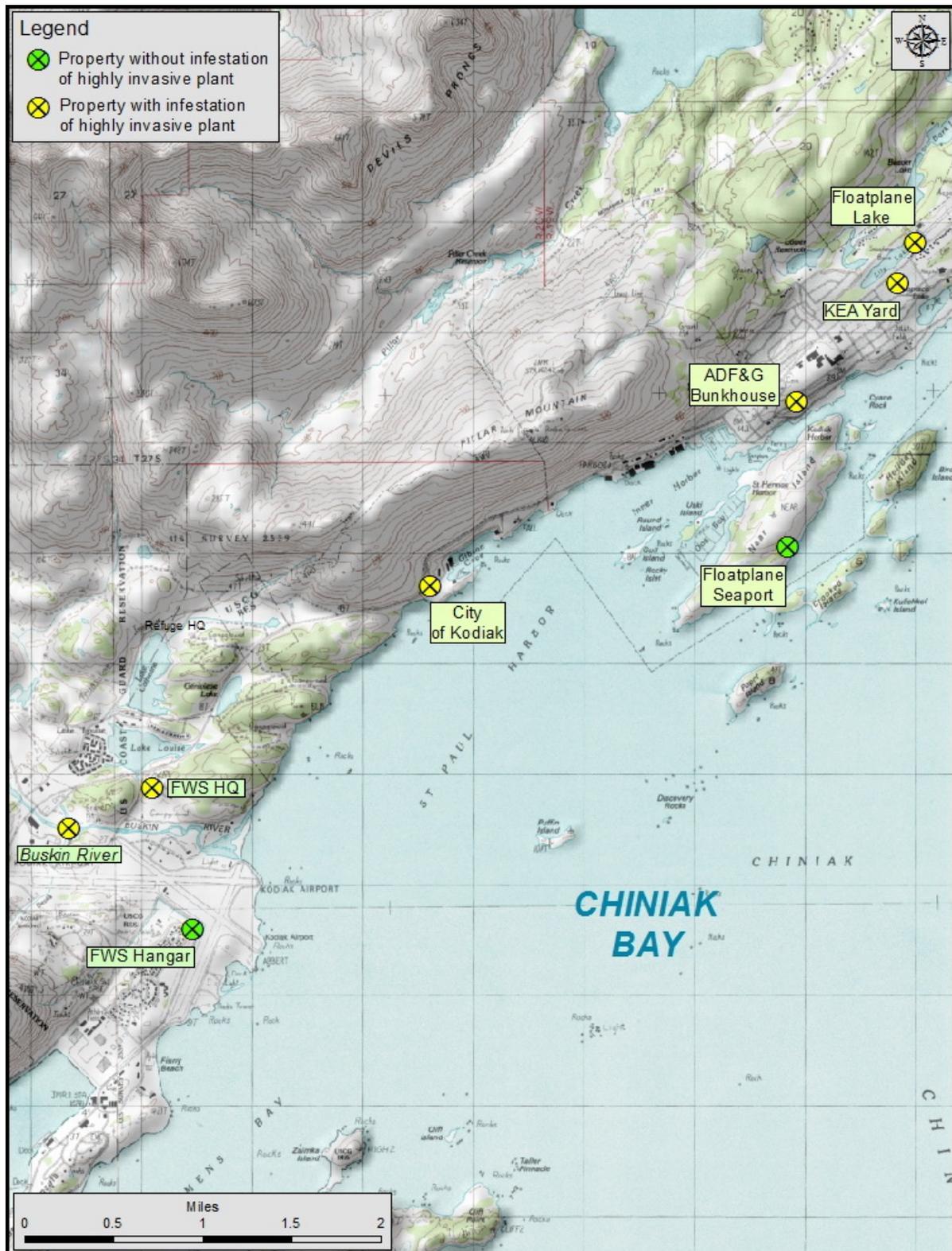


Table 1. Comparison of alternatives. (National Wildlife Refuge abbreviated NWR)

Category	Alternative 1: Continue Current IPM Approach	Alternative 2: Amend Current IPM Approach
Geographic scope	<ul style="list-style-type: none"> • Refuge & private lands inside NWR legislative boundary • Private and state lands outside NWR legislative boundary 	<ul style="list-style-type: none"> • All land ownership types in Kodiak Archipelago, including Alaska Native lands inside and outside NWR legislative boundary, as well as municipal & non-NWR federal lands in Kodiak Archipelago
Refuge IPM priorities	<ul style="list-style-type: none"> • Refuge lands • Conservation Easement lands • Private land inside Kodiak NWR's legislative boundary • Private, municipal, & state land outside Kodiak NWR's legislative boundary 	<ul style="list-style-type: none"> • Refuge lands • Conservation Easement lands • All other non-NWR & non-Easement lands inside Kodiak NWR legislative boundary • Critical control points outside Kodiak NWR legislative boundary
Refuge IPM activities on non-Refuge lands*	<ul style="list-style-type: none"> • Conservation partner leads IPM operations • Service may provide financial, logistical, & technical assistance to partner 	<ul style="list-style-type: none"> • Conservation partner leads IPM operations • Service may provide financial, logistical, & technical assistance to partner • Service may lead IPM operations if partner resources unavailable
Herbicide use	<ul style="list-style-type: none"> • Aminopyralid or glyphosate herbicide only • Application of aminopyralid consistent with the herbicide label • Application of aminopyralid prohibited within 10 feet of waterbodies 	<ul style="list-style-type: none"> • Aminopyralid or glyphosate herbicide only • Application of aminopyralid consistent with herbicide label

*Access & conduct of IPM operations requires coordination and permission of land owner.

3.0 Affected Environment

In the 2010 EA, the affected environment chapter summarized the relevant physical, biological, and social components of the ecosystem, some of which could be affected by actions associated with invasive plant management by Kodiak NWR and its conservation partners. Consistent with [40 CFR 1502.21](#), we incorporate by reference the narrative presented in the 2010 EA for this chapter including sections 3.1 (land status), 3.2 (physical environment), 3.3 (biological environment), and 3.4 (human environment).

4.0 Environmental Consequences

We identified, described, and compared the ecological and human health impacts of alternatives in the 2010 EA. In this preliminary supplement we incorporate by reference ([40 CFR 1502.21](#)):

- The narrative analyses presented in the 2010 EA for sections 4.1 (physical environment), 4.2 (biological environment), and 4.3 (human environment);
- The analyses presented in the FONSI including our responses to public comments on the EA draft; and
- The Section 810 evaluation, as required by the Alaska National Interest Lands Conservation Act of 1980 (Appendix C of the 2010 EA).

We categorize level of impact (negligible, minor, moderate, major) in accordance to the type, intensity, and size of area affected by a management practice. The definitions of these levels are:

- **Negligible:** Resources would not be affected, or the effects would be at or near the lowest level of detection. Resource conditions would not change or would be so slight there would not be any measurable or perceptible consequence to a population, wildlife or plant community.
- **Minor:** Effects would be detectable but localized, small, and of little consequence to a population, wildlife or plant community.
- **Intermediate:** Effects would be readily detectable and localized with consequences to a population, wildlife or plant community.
- **Major:** Effects would be obvious and would result in substantial consequences to a local area or regional population, wildlife or plant community.

Time scales are defined as either short-term or long-term:

- **Short-term or temporary:** An effect that generally would last less than a year or season.
- **Long-term:** A change in a resource or its condition that would last longer than a single year or season.

Comparison of alternatives indicated some slight differences in the type and magnitude of environmental impacts presented in this preliminary SEA (Table 2). Implementation of Alternative 2 may increase short-term negative impacts to natural resources (soils, water quality, vegetation, wildlife, and aquatic resources) based on an increased number of areas and acres subject to IPM with herbicide in critical control points on non-Service properties outside the Refuge's legislative boundary. However, the individual and cumulative levels of increased impact would be negligible because, most of the time, conservation partners would have sufficient resources to successfully lead management of these infestations. In cases where conservation partner resources were unavailable, the Service would potentially lead management but the total number of additional acres annually managed would be minimal (e.g., usually 5 acres or less).

Implementation of Alternative 2 would allow, as needed, control of highly invasive species of broadleaf forbs in seasonally dry wetlands and riparian areas which are located near water (less than 10 feet). Compared with Alternative 1, initial impact to natural resources would decrease from minor and negative to negligible. Additionally, long-term and cumulative impacts to natural resources would increase to moderate and positive, compared to minor and positive under Alternative 1. Specifically, infestations near water managed under Alternative 2 would be more efficiently targeted and controlled; sedimentation would not result from disturbance to soils adjacent to water caused by manual removal methods; and non-invasive vegetation and wildlife habitat would be more promptly restored. Under Alternative 2, contamination of water would be prevented by a combination of practices including use of a targeted, foliar application method, best IPM practices, and adherence to herbicide label stipulations. With respect to worker and public safety and health, no substantial difference was identified between alternatives in short-, long-term, and cumulative impacts.

Implementation of Alternative 2 would result in a slight but important net increase in positive impacts over the long-term to natural resources compared to Alternative 1. As described in Alternative 2 the targeting of critical control points inside and outside Refuge lands would increase the efficiency of invasive management. Though important, the larger benefit of increasingly systematic action would be a net reduction in the probability of spread of invasive plants from critical control points to Refuge lands. Correspondingly, potential impacts of new infestations would be prevented and therefore minimized.

In conclusion, the Service believes that the proposed action would not substantially increase negative impacts for any of the resource areas evaluated in the 2010 EA. We also believe this preliminary SEA falls within the scope of analysis documented in the 2010 EA and that the potential impacts resulting from the proposed action have been adequately evaluated in this preliminary SEA.

5.0 Consultation and Coordination

In February 2013, the Refuge notified the public, stakeholders, and agencies of its intent to prepare this preliminary SEA and requested input on a summary of the proposed action (Appendix A). A notice posted in the Kodiak Daily Mirror, the local paper, stated our intent to prepare this SEA, request for public input, and indicated a point of contact with the Refuge to request additional information. We also distributed letters via email or regular mail to 45 individuals affiliated with 16 public-sector organizations; 11 Alaska Native organizations (Tribes and Native Corporations); 25 individuals affiliated with 23 private-sector organizations; and 3 non-affiliated individuals. The distribution included but was not limited to any organizations and individuals that commented on the 2010 EA.

Table 2. Summary of environmental consequences of alternatives.

Category	Alternative 1: Continue Current IPM Approach	Alternative 2: Amend Current IPM Approach
Soils	Physical & chemical control actions result in minor, negative short-term effect. Scope of effect is limited, however, due to small size (less than 1 acre) of areas subject to annual control actions. Over time the effect would change from minor and short-term to negligible and temporary based on progressive reduction in area subject to annual control actions. Soil disturbance may result from manual removal of roots of intermixed invasive broadleaf and native vegetation near water.	Same as Alt. 1 except impact to soils near water would be reduced since soil would not be disturbed by removal of intermixed roots of invasive broadleaf forbs and native vegetation near water.
Water quality	Negligible effect attributed to limited area of control actions, limited mobility of residual herbicide, minimal toxicity of herbicides to invertebrates and vertebrate animals, fairly rapid dissipation and biodegradation of herbicides, and use of best IPM practices to minimize risk of off-site and non-target effects. Increased sedimentation may result from erosion of soil near water attributed soil disturbance from manual removal of infestations of invasive broadleaf forbs.	Same as Alt. 1 except for potential reduced sedimentation because aminopyralid herbicide, not manual removal, would be used to manage broadleaf forb infestations near water. Where aminopyralid was used near water, risk of negative impact would be negligible due to limited number and size of areas that would require such control, direct foliar application method, herbicide label requirement restrictions (e.g., suitable weather), and best IPM practices that minimized potential for off-site movement and effects.
Vegetation	Control actions result in minor, negative short-term effect where herbicide applied to non-target plant species intermixed with invasive species. Impact would change to positive and moderate over long-term due to reduction in area of invasive plant infestation and recovery of native or non-invasive plants on infestation sites. Manual removal of invasive broadleaf forbs near water would increase impact to intermixed native vegetation. Prolonged effort required to attain complete control would increase probability that residual plants may spread and establish new infestations.	Same as Alt. 1 except as follows. Level of initial negative impact would slightly increase because, each year, a few additional non-Refuge sites and acres may be subject to control action. Use of aminopyralid to control broadleaf forbs near water would reduce impact to intermixed native vegetation, compared to manual removal, because roots and soils would not be disturbed and the more selective nature of the herbicide. It would take fewer years to completely control invasive forbs near water, which would minimize probability that remaining plants would spread and establish new infestations.
Wildlife	Negligible short-term impact and minor to moderate long-term positive impact. During control operations, some wildlife may be displaced due to disturbance. After control operations, wildlife use of infestation sites may be further reduced where food and cover are decreased. However these impacts are considered negligible due to the small size of sites, reduction	Same as Alt. 1 except potential slight increase in short-term impact due to possible increase in the number of sites and acres subject to control annually. Long-term positive impact would slightly increase, compared to Alt. 1, because targeting of critical control point reduced probability of new introductions of invasive plants to Refuge lands. Additionally,

	in treatment area over time, low herbicide toxicity, limited herbicide mobility and persistence, and directed herbicide application methods. Positive impacts increasingly accrue over long-term as more acres of native wildlife food and cover are restored on sites formerly infested by invasive species.	positive impact would increase from improved efficiency where aminopyralid herbicide was used near water to control invasive forbs and restore native plant food and cover.
Aquatic resources	Negligible short-term impacts and minor to moderate long-term positive impacts. Potential for herbicide exposure minimized by relatively small area subject to invasive control action, conservative application practices, and relatively rapid dissipation and biodegradation of chemicals in terrestrial and aquatic environments. Aquatic resources benefit over long-term to the extent that native vegetation is increasingly restored in areas formerly occupied by invasive plants.	Same as Alt. 1 except potential slight increase in impact due to possible increase in the number of sites and acres subject to control annually. Negligible risk to aquatic resources from aminopyralid use near water due to limited number and size of areas that may require such control, direct foliar application method of herbicide, herbicide label requirement restrictions (e.g., site specifications, suitable weather, etc.), and best IPM practices that minimize potential for off-site movement and effects. Compared to Alt. 1, long-term benefit greater because risk reduced of new introductions of invasive plants to aquatic habitats and adjacent uplands via targeting of infestations in critical control points on non-Refuge lands.
Worker safety & health	Minor temporary negative impacts to a few workers repeatedly exposed to herbicide at multiple project sites over a period of years. However, the inherent level of safety and health risk would be minimal and readily mitigated by use of minimally toxic herbicides (aminopyralid, glyphosate) coupled with full compliance with worker training and safety requirements, herbicide label stipulations, and agency standards for safe herbicide storage, transportation, use, and disposal.	Same as Alt. 1.
Public* safety & health	Negligible temporary impacts to public from potential exposure to residual herbicide. The inherent level of safety and health risk would be minimal and readily mitigated through use of minimally toxic herbicides (aminopyralid, glyphosate); and through full compliance with temporary access restrictions to herbicide application areas, herbicide label stipulations, and agency standards for safe herbicide storage, transportation, use, and disposal.	Same as Alt. 1.

* Also includes “non-public”, which is defined as Refuge employees, contractors, and cooperators engaged in work on Refuge lands; employees who reside in Refuge-owned apartments; Refuge salmon set-net permittees and family who occupy private residences at 24 sites on Refuge land; and seasonal and permanent residents of private land, in cases where owners request the District and Service to undertake control operations on those sites.

6.0 References Cited

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- [USNPS] U.S. National Park Service. 2008b. Invasive plant management plan for Yosemite National Park: Finding of no significant impact. U.S. National Park Service, Yosemite National Park, Yosemite, CA.

Appendix A. Letter notifying the public and stakeholders of the Refuge's intent to prepare this amendment to its 2010 Environmental Assessment regarding integrated pest management of invasive plants on Kodiak National Wildlife Refuge and vicinity.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kodiak National Wildlife Refuge
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Kodiak, Alaska 99615
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4 February 2013

Kodiak National Wildlife Refuge is preparing an amendment to the environmental assessment (EA) "Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity". This EA governs Refuge management of invasive plants. The EA was approved in November 2010 and describes the purpose and need for management, the approved strategy, potential environmental consequences associated with implementation, and best management practices. To access the EA and related decision document (Finding of No Significant Environmental Impact) see: http://www.fws.gov/refuge/Kodiak/what_we_do/resource_management.html.

The purpose of the amendment is to clarify the scope of Refuge-led and Service-supported invasive plant control on non-Refuge lands. In the 2010 EA, we defined non-Refuge lands as (1) private lands inside Refuge legislative boundaries and (2) private, municipal, and State lands outside Refuge legislative boundaries. The amendment would add Tribal and non-Refuge federal lands outside the Refuge's legislative boundaries to the second component of the definition. Additionally, in the 2010 EA, we outlined several ways in which the Service would facilitate cooperation between private landowners, the Kodiak Soil and Water Conservation District, and the Refuge. These methods included: 1) advocate for use of an adaptive management approach to manage documented infestations of highly invasive plant species; 2) provide technical assistance, demonstration of management methods, and participation in management actions; and 3) to provide financial or direct management assistance. The EA amendment would add "leading a control action" to the list of techniques we could employ to facilitate habitat conservation on private lands. The EA amendment would outline the specific criteria under which such an action would be employed. Specifics of proposed modifications are addressed below.

Proposed Action

We may support requests for assistance from the Kodiak Soil and Water Conservation District or other conservation partner to conduct an invasive plant control action on (1) private land inside the legislative boundaries of the Refuge, and (2) private, municipal, state, Tribal, and federal land (e.g., U.S. Coast Guard) outside the legislative boundaries of the Refuge. Service support, which may consist of funding, technical, or field operations assistance, would be contingent upon compliance with requirements identified in the approved EA governing target species, action threshold, herbicide, worker safety, and landowner and Service approval.

If the District or other conservation partner cannot take action due to lack of funds or personnel, the Refuge may lead a control action on (1) private land inside the legislative boundaries of the Refuge and (2) private, municipal, state, Tribal, or federal land outside the legislative boundaries of the Refuge. We anticipate that the need for such action would be infrequent because other organizations would usually have sufficient resources to accomplish the control objective. However,

Appendix A. (continued)

cases may arise when partner capacity is insufficient and there is a need for prompt control to prevent potential spread of an infestation to Refuge lands. Such an action would require landowner approval and compliance with requirements identified in the approved EA.

We believe the proposed amendment would not significantly change the analysis of impacts for any of the resource areas evaluated in the 2010 EA, nor would it result in a new set of alternatives, and therefore we are not proposing to conduct a new environmental analysis. We believe the proposed amendment falls within the scope of analysis documented in the 2010 EA and that the potential impacts resulting from the amendment have been adequately evaluated by the EA and the associated decision document. We seek public input on this matter.

Please take a moment to review the 2010 EA and related decision document, and to consider the proposed amendment. If you have specific comments, please include them in your response to this message, and they will be considered in the preparation of the EA amendment. For additional information on this project, please contact Bill Pyle, Supervisory Wildlife Biologist (Bill_Pyle@fws.gov; 907-487-0228). Comments may be submitted directly to him by March 4, 2013. We anticipate completing the EA amendment by April 2013 and having it available for a 30-day public review.

Sincerely,



Kent Sundseth
Acting Refuge Manager