Decision Notice and Finding of No Significant Impact

United States Department of Agriculture

Forest Service
May 2014

Kenai Peninsula Invasive Plant Treatment Project

Glacier and Seward Ranger Districts, Chugach National Forest, Alaska

Introduction

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual’s income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA’s TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.
This Decision Notice and Finding of No Significant Impact for the Kenai Peninsula Invasive Plant Treatment Project (herein referred to as Decision) documents my proposal for selecting management activities within the project area as analyzed in Alternative 2 of the Environmental Assessment (EA). The project area is located in the Chugach National Forest on the Glacier and the Seward Ranger Districts and two small areas in State lands within the Kenai Peninsula (Figure 1).

Figure 1. Kenai Peninsula Invasive Plant Treatment Area outline in black. Treatment areas are shown in red, dashed lines are major roads.
Field inventories identified 84 non-native plant species within the boundaries of the 1.3-million acre project area. The most highly invasive of these are the focus of treatment. Species of greatest concern include Canada thistle, orange hawkweed, reed canarygrass, and bird vetch, among others (Table 1). Our ability to prevent or minimize the adverse impacts of these and other invasive plants is greatest if populations can be treated while they are small and in the early stages of invasion.

The purpose of this project is to control or eradicate known invasive plant infestations and treat new infestations in an efficient and cost-effective manner that complies with environmental standards. This would move us toward the goal to “prevent introduction and spread of exotic plants and reduce areas of current infestation” and the objective to “treat infestations with a high potential to spread” as stated on page 3-4 of the 2002 Revised Chugach National Forest Land and Resource Management Plan (Forest Plan).

The EA documents the analysis of the “no action” alternative and the proposed action. Alternative 2 is the proposed action, designed to meet the purpose and need for the project.

**Decision**

As Responsible Officials, we have considered several factors during my evaluation of this project. We have reviewed the project file documentation, including the purpose and need for action (EA, p. 4), the comments received during the project's comment period (project file); and the direction outlined in the 2002 Revised Land and Resource Management Plan (Forest Plan). I propose to implement Alternative 2 as described in the EA (pp. 6-10). The following modification was made to the proposed action as a part of my Decision:

- Glyphosate would be used as a treatment option for only three grass species; Reed canarygrass (*Phalaris arundinacea*), Wild oats (*Avena fatua*), and Quackgrass (*Elymus repens*) (EA pp. 29-34).

The proposed action is to treat invasive plants on the Kenai Peninsula within the Glacier and Seward Ranger Districts. Herbicides proposed to be used (glyphosate and aminopyralid), and surfactants, which are compounds commonly added to herbicides to improve performance, are discussed in detail in the EA (pp. 11-13). For all herbicide applications, only ground based methods using a hand/backpack sprayer would be used. Spot hand spraying would be used to treat individual or groups of plants.

Design Criteria (Appendix 1) are part of the proposed action. They were developed to ensure responsible use of herbicides and to minimize potential impacts associated with the proposed activities. Analysis of effects presented in the EA (pp. 11-25) is based on the implementation of these non-discretionary features.

Proposed activities would be authorized as summarized below and shown in Figure 2:

**Treatment of infestations on National Forest System lands**

Alternative 2 incorporates integrated weed management techniques and expands chemical control methods using a two-prong approach as described below.

**Existing Infestation**

Treat up to 50 acres per year of known invasive plant infestations found within treatment areas and mineral material sites shown in Figure 2.
Table 1 shows the estimated mapped acres of infestations of highly invasive species within the project area. Table 2 displays Alaska weeds of concern proposed to be treated primarily in mineral material sites. For all existing infestations, a combination of management techniques would be used to effectively and efficiently control a particular invasive plant infestation. Appendix 2, Table 3 describes specific treatments proposed by species for this project.

**New Infestations**

New infestations of invasive species found on National Forest System lands in the Kenai Peninsula would be treated using specific control measures proposed by species for this project (Appendix 2, Table 3). New infestations are likely very small, usually consisting of only several individual plants, and rarely exceed 1/10 acre.

**Treatment of Infestations on State of Alaska lands**

Alternative 2 includes the control treatment of two known invasive plant infestations on state lands; an infestation of orange hawkweed located near MP 72 of the Seward Highway, and an infestation of bird’s foot trefoil located under the Canyon Creek Bridge. Appendix 2, Table 3 describes specific treatments proposed by species for this project. Federal funds may potentially be used to implement these control treatments, and the location of the infestations pose a risk of spreading invasive plants onto National Forest System lands, therefore, they are included in the proposed action.
Figure 2. Proposed treatment areas for the Kenai Peninsula Invasive Plant Treatment project
Kenai Peninsula Invasive Plant Treatment Project

Table 1. Estimated mapped acres and occurrences of infestations of highly invasive plants.

<table>
<thead>
<tr>
<th>Name of invasive plant</th>
<th>Estimated acreage of current infestations</th>
<th>Number of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada thistle (Cirsium arvense)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Orange hawkweed (Hieracium aurantiacum)</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Butter and eggs (Linaria vulgaris)</td>
<td>10</td>
<td>83</td>
</tr>
<tr>
<td>Bird’s foot trefoil (Lotus corniculatus)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>White sweetclover (Melilotus alba)</td>
<td>5</td>
<td>38</td>
</tr>
<tr>
<td>Yellow sweetclover (Melilotus officinalis)</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>Reed canarygrass (Phalaris arundinacea)</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Field sowthistle (Sonchus arvensis)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bird vetch (Vicia cracca)</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>Total approximate infested acres</td>
<td>56</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Alaska weeds of concern to be treated primarily in mineral material sites

<table>
<thead>
<tr>
<th>Name of invasive plant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species occurring in the project area</strong></td>
</tr>
<tr>
<td>Wild oat (Avena fatua)</td>
</tr>
<tr>
<td>Narrowleaf hawkweed (Crepis tectorum)</td>
</tr>
<tr>
<td>Quackgrass (Elymus repens)</td>
</tr>
<tr>
<td>Hempnettle (Galeopsis spp.)</td>
</tr>
<tr>
<td>Narrowleaf hawkweed (Hieracium umbellatum)</td>
</tr>
<tr>
<td>Fall dandelion (Leontodon autumnalis)</td>
</tr>
<tr>
<td>Oxeye daisy (Leucanthemum vulgare)</td>
</tr>
<tr>
<td>Black bindweed (Polygonum convolvulus)</td>
</tr>
<tr>
<td>Common tansy (Tanacetum vulgare)</td>
</tr>
<tr>
<td>Scentless false mayweed (Trupleurosernum perforatum)</td>
</tr>
<tr>
<td><strong>Species not known currently in the project area</strong></td>
</tr>
<tr>
<td>Spotted knapweed (Centaurea stoebe ssp. micranthos)</td>
</tr>
<tr>
<td>Field bindweed (Convulvulus arvensis)</td>
</tr>
<tr>
<td>Scotch broom (Cytisus scoparius)</td>
</tr>
<tr>
<td>Leafy spurge (Euphorbia esula)</td>
</tr>
<tr>
<td>Meadow hawkweed (Hieracium caespitosum)</td>
</tr>
<tr>
<td>Purple loosestrife (Lythrum salicaria)</td>
</tr>
<tr>
<td>Bohemian knotweed (Polygonum x. bohemicum)</td>
</tr>
<tr>
<td>Japanese knotweed (Polygonum cuspidatum)</td>
</tr>
<tr>
<td>Giant knotweed (Polygonum sachalinense)</td>
</tr>
<tr>
<td>Tansy ragwort/stinking willie (Senecio jacobaea)</td>
</tr>
</tbody>
</table>
Reasons for the Decision

Our criteria for making our Decision was based on how well the management actions analyzed in the EA meet the purpose and need of the project, and address issues raised during the scoping process and the comment period. We considered how the proposed treatments in the Kenai Peninsula Invasive Plant Treatment Project respond to the goals and objectives of the Forest Plan and provide consistency with active integrated weed management on adjacent federal and state lands (EA pp. 2-4). In evaluating the effects of the proposed activities as described in the EA, pages 11 through 25, it is our judgment that Alternative 2 achieves the stated purpose and need and brings the project area closer to the Forest Plan desired condition.

The focus of the proposed action is to control or eradicate known invasive plant infestations and treat new infestations in a way that protects resources, meets the purpose and need and does not conduct management activities above and beyond what is needed to meet those goals. Incorporating integrated methods into our current invasive plant control management and providing a mechanism to allow rapid response to newly emerging infestations is an effective way to protect uninfested areas from future introduction and spread of invasive plants. Owing to the relative rarity of invasive plants within natural communities in the project area, we are in a unique position to prevent invasive plant problems before they occur or control them before they expand beyond a reasonable capability to do so. Our ability to prevent or minimize the adverse impacts of invasive plants is greatest if populations can be treated while they are small and in the early stages of invasion. Additional benefits of early stage treatments include reduced treatment costs, less herbicide use, smaller, localized ground disturbance, and minimal impacts to natural resource values (EA pp. 2-4). Our Decision incorporates all of these important considerations.

In making our Decision, we took into account the interests and values of the public, and carefully considered the appropriate type and level of treatment needed to achieve Forests Plan goals and project objectives. Alternative 2 provides adequate benefits to the public within the framework of existing laws, regulations, policies, public needs, and capabilities of the land, while meeting the stated purpose and need for this project. Based on all of these factors it is our judgment that Alternative 2 best provides for the greatest net benefit to the public. No single factor determined our Decision.

Our Decision is based on a review of the record that shows consideration of relevant scientific information, including responsible opposing views, and as appropriate, the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk.

It is for these reasons we are proposing Alternative 2, the Proposed Action as our Decision.

Consideration of Public Comments

We considered all comments and opinions that have been received to date on this project in making our Decision. We invited Federal, State and local government agencies, the general public, and other groups and individuals potentially interested in or affected by the project to review and comment on our proposed action (EA p. 5). All comments received and documentation of how those comments or concerns were addressed is included in the project record and in Appendix 3.

Our Decision included consideration of the concerns regarding the use of the herbicide glyphosate. Alternative 2 incorporates project design criteria to ensure the responsible use of herbicide and to minimize potential impacts associated with the proposed treatments. The EA concluded that based on the best available science, herbicide exposure from this project would
Anchorage may affect concludes that We considered responses. The legal notice beginning Comments received also posted or The move project manual or Environmental variety Under reasonable range control works based on control efforts such as hand pulling, digging, and taping. Although manual control works in some cases, it is both inefficient and ineffective for many infestations within the project area, and in certain infestations can exacerbate the problem. Alternative 1 would not move us toward the desired goals and objectives stated in the Forest Plan (pp. 3-4) to the degree of Alternative 2 (EA pp. 13-25).

Public Involvement and Scoping
The proposal was listed in the schedule of proposed actions beginning in the January 2012 edition. A scoping package describing the purpose and need and the proposed action was mailed or emailed to 63 individuals, groups and public agencies on October 1, 2012. The proposal was also posted to the Forest’s internet site. Five individuals responded to the scoping proposal. Comments received during the scoping period were used to identify issues regarding the effects of the proposed action. The two issues identified from scoping comments were: (1) herbicide use may be detrimental to salmon spawning and salmon habitat; and (2) herbicide use may be detrimental to wildlife. These were addressed in effects analysis in the EA (pp. 21-24).

The legal notice beginning the 30-day comment period was published on December 5, 2013 in the Anchorage Daily News. Four commenters responded with ten comments. The comments and responses to those comments are documented in the project file and in Appendix 3.

We considered all comments received on this project before proposing our Decision. The EA concludes that based on the best available science, herbicide exposure from this project would not affect human health (pp. 13-17). Project Design Criteria incorporated in the proposed action are
designed to minimize or eliminate risks of herbicide use. Effects analysis disclosed in the EA (pg. 21-24) show there is low potential for glyphosate to affect terrestrial invertebrates or aquatic ecosystems. However, glyphosate would only be used for one priority species (reed canarygrass) and two species in mineral material sites (wild oats and quackgrass). This clarification does not change the scope or intent of the proposed action or our Decision.

**Finding of No Significant Impact**

After considering the environmental effects described in the EA, we have determined that Alternative 2, the proposed action, would not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Therefore, we propose that an environmental impact statement would not be prepared. We base our findings on the context and intensity of the project as analyzed and documented in the EA and project file.

**Context** means that the significance of an action must be analyzed in several contexts (i.e. local regional, worldwide), and over short and long time frames. For site-specific actions, significance usually depends upon the effects in the local rather than in the world as a whole.

**Intensity** refers to the severity of the expected project impacts and is defined by the 10 points below.

**Context**

This project is limited in scope and duration. Proposed treatments would be applied directly to the limited occurrences of invasive plant infestations on National Forest System lands and two specific locations on State of Alaska lands within the 1.3 million-acre project area. For all herbicide applications, only ground based methods using a hand/backpack sprayer would be used. Treatment of existing invasive plant infestations within the project area would be limited to a total of 50 acres per year, and newly emerging infestations limited to one acre per year within the project area (EA pp. 3-10). The proposed treatments represent up to four thousandths of a percent of the project area being treated in any given year.

This project incorporates a strategy that assists in the determination of whether an invasive plant will be tolerated on the landscape or if the invasive plant needs to be controlled or eradicated. The project was further designed to minimize short and long-term environmental effects through the application of project design criteria (Appendix 1).

It is our determination that the effects of implementing Alternative 2 would not be significant locally, regionally or nationally.

**Intensity**

The following factors were considered to evaluate intensity.

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

Impacts associated with the proposed project are discussed in the EA. The actions will not have significant impacts on resources identified and described in the Environmental Consequences section of the EA (EA pp. 11-25). The effects of the decision to be made are not significant in the long and short terms. Our Decision would provide the mechanisms to control or eradicate known invasive plant infestations and treat new infestations in an efficient and cost-effective manner on the Glacier and the Seward Ranger Districts and two small areas on State lands within the Kenai Peninsula. In addition, as described under “Reasons for My Decision”, the proposed activities
would result in only slight beneficial or undesirable environmental effects, while proactively limiting the growth and spread of invasive plant species on the landscape.

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

The herbicides glyphosate and aminopyralid are proposed to be used to control invasive plants in the project area. The EA discusses use of herbicides and surfactants and documents the risk assessments for herbicides considered in the EA (pp. 11-13). The herbicide risk assessment evaluated the potential for harm to non-target plants, wildlife, human health, and aquatic organisms.

Project design criteria are incorporated into the proposed action to minimize or eliminate potential risks of herbicide use (Appendix 1 and EA pp. 9-10). The EA concludes that based on the best available science, herbicide exposure from this project would not measurably affect human health (pp. 13-17), Alaska Region sensitive plants (pp. 18-21), fisheries and aquatic habitat (pp. 21-22), and wildlife (pp. 22-24).

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

The project area does not contain areas that have been identified as ecologically critical or otherwise unique for the geographic area. No parklands, prime farmlands, or wild and scenic rivers are located within the project area.

Although no rivers have been officially designated as wild and scenic, several have been recommended in the Forest Plan. These include Twentymile River, Portage Creek, East Fork sixmile Creek, Sixmile Creek, and Russian River. Twentymile River is recommended for scenic value while the rest are recommended for recreation value. Implementation of the project, including project design criteria, would ensure these values are maintained (EA pp 9-10, EA pp 16-17, and EA pp. 21-22).

In accordance with Section 106 of the National Historic Preservation Act, 36 CFR 800, FSH 2360, and the Programmatic Agreement among the Alaska Cultural Heritage Program, Alaska State Historic Preservation Office, and Region 10 Alaska Forests, the Chugach National Forest Heritage Program reviewed the scope and scale of the proposed project and determined the proposed project would cause no effect to historic properties (EA pp. 24-25).

Wetlands and floodplains occur within the project area. Implementation of project design criteria would minimize impacts to wetlands and floodplains and ensure no significant effects to those resources.

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

The effects of the invasive plant treatments proposed in this project area are known and they are not unique. Glyphosate is one of the most widely used herbicides in the country and has been extensively studied. The original Risk Assessment for glyphosate (SERA 2003) was updated in 2011 (SERA 2011) in order to incorporate the extensive literature available, the availability of numerous formulations, and the use of surfactants. These Risk Assessments along with the Risk Assessment for aminopyralid reference hundreds of studies and provide some of the most thorough and comprehensive information for these herbicides. The literature and assessments
applicable to this project did not indicate project treatments would be highly controversial (EA pp. 11-25). Concerns regarding herbicide use were identified through the project's public comment opportunities. While some commenters have concerns about the use and unknown effects of herbicide treatments, no evidence has been presented showing environmental effects of these activities within the project area are different than has been disclosed in EA (detailed responses are included in the project record).

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

Possible effects on the human environment are generally known and understood. Glyphosate is one of the most widely used herbicides in the country and has been extensively studied. The original Risk Assessment for glyphosate (SERA 2003) was updated in 2011 (SERA 2011) in order to incorporate the extensive literature available, the availability of numerous formulations, and the use of surfactants. These Risk Assessments along with the Risk Assessment for aminopyralid reference hundreds of studies and provide some of the most thorough and comprehensive information for these herbicides. The EA (pp. 6-25) discloses potential environmental impacts supported by accepted techniques and reliable data. The analysis discloses incomplete and unavailable information (EA pp. 11-13). The recognized potential effects resulting from the proposed activities are supported by literature and assessments and do not involve unique or unknown risks.

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

The actions proposed will not lead to another future action or actions that will have significant effects either individually or in combination with each other or with this action. The Kenai Peninsula Invasive Plant Treatment Project EA represents a site specific analysis. Any future proposals would need to consider all relevant scientific and site-specific information available at the time and would require full compliance with NEPA. Neither the alternatives analyzed here, nor any of their individual components would establish a precedent for future actions with significant effects, nor would they represent a decision in principle about future consideration.

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

Cumulative effects are analyzed in the EA for each resource area potentially affected (pp. 11-25). As part of the proposed action, design features are incorporated to minimize potential direct and indirect effects (EA pp. 9-10) and bring the proposed activities into compliance with Forest Plan standards and other relevant laws and regulations, thereby reducing any potential cumulative impacts. Consideration of potential cumulative effects included past, present, and reasonably foreseeable future activities. The analysis disclosed in the EA and supporting documents determine this project would not cause significant cumulative effects on biological or physical resources when considered in relation to other actions.

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

Project design features (Appendix I and EA pp. 9-10) for treatment areas within the Squilantu Archaeological District (Russian River Campground area) ensure compliance in implementing
Section 106 of the National Historic Preservation Act, 36 CFR 800, FSH 2360, and the Programmatic Agreement among the Alaska Cultural Heritage Program, Alaska State Historic Preservation Office, and Region 10 Alaska Forests. All other treatment areas, including those areas in which historic mining sites are present may be treated as described in the project proposal. No significant effects to cultural resources were identified (EA pp. 24-25).

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.

Biological evaluations were completed for threatened, endangered, proposed, and sensitive plant and animal species. No threatened and endangered plant or animal species would be affected by the Alternative 2 proposed activities (EA p. 26).

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

Actions to be implemented under this Decision are fully consistent with the Forest Plan. The proposed alternative would not threaten a violation of federal, state, or local law, or requirements imposed for the protection of the environment; see the section below for further details regarding applicable laws and regulations. This action is also in full compliance with the National Environmental Policy Act and is consistent with the National Forest Management Act and its requirements detailed in 36 CFR 219.

Of the ten Alaska Region Sensitive species that occur or are suspected to occur within the project area, five have suitable habitat within the treatment areas. Alternative 2 proposed actions may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the following sensitive species: Cypripedium guttatum, Ligusticum calderi, Papaver alboroseum, Piperia unalascensis, and Romanzoffia unalascensis (EA pp.18-21).

Findings Required by Other Laws and Regulations

National Forest Management Act (NFMA)
The Decision to authorize treatment of invasive plants using integrated weed management techniques is consistent with the intent of the Forest Plan's long term goals and objectives. Management practices and activities in Alternative 2 are consistent with Forest-wide and management area direction. The project was designed in conformance with Forest Plan standards and incorporates appropriate Forest Plan guidelines (Forest Plan, pp. 3-20 through 3-49; and Chapter 4, pp. 4-1 through 4-97). The Forest Plan complies with all resource integration and management requirements of 36 CFR 219 (219.14 through 219.27).

Endangered Species Act of 1973, as amended
Biological evaluations were completed for threatened, endangered, proposed, and sensitive plant and animal species. No threatened and endangered plant or animal species would be affected if my Decision was implemented.
**Bald Eagle Protection Act**
Alternative 2 management activities implemented within bald eagle habitat would be in accordance with the memorandum of understanding between the Forest Service and the U.S. Fish and Wildlife Service.

**ANILCA Section 814, Subsistence Evaluation and Finding**
There is no documented or reported subsistence use that would be restricted by implementing my Decision. For this reason, none of the alternatives would result in a significant possibility of a significant restriction of subsistence use of wildlife, fish, or other foods.

**Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended**
The Magnuson-Stevens Fishery Conservation Act (the Act) requires that all Federal agencies consult with the National Marine Fisheries Service when any project “may adversely affect” essential fish habitat. The Act also requires that agencies with existing consultation processes contact the National Marine Fisheries Service to discuss how the existing processes can be used to satisfy the essential fish habitat consultation requirements (50 CFR 600.920(e)(3)). My Decision would not cause any action that may adversely affect essential fish habitat as defined by this Act.

**National Historic Preservation Act of 1966**
Section 106 of the National Historic Preservation Act requires that all Federal undertakings follow the regulations found at 36 CFR 800 to identify and protect cultural resources that are within project areas and which may be affected by projects. My Decision is consistent with the Programmatic Agreement between the Chugach National Forest, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer.

**Executive Order 11988 – Wetlands**
Wetlands occur in the project area. If my Decision were implemented, project design criteria would minimize the impact to wetlands in accordance with E.O. 11988.

**Executive Order 11990 – Floodplains**
Floodplains occur in the project area. If my Decision were implemented, project design criteria would minimize the impact to floodplains in accordance with E.O. 11990.

**Executive Order 12898 - Environmental Justice**
This project is not anticipated to cause disproportionate adverse human health or environmental effects to minority or low-income populations. My Decision is consistent with Executive Order 12898.

**Executive Order 12962 - Recreational Fisheries**
No major adverse effects to freshwater or marine resources would occur if my Decision were to be implemented.

**Clean Air Act**
If my Decision were implemented, anticipated emissions would be of short duration and would not exceed State of Alaska ambient air quality standards (18 AAC 50).
**Executive Order 13112 - Invasive Species**
Invasive species populations have the potential to spread in the project area. The purpose of my Decision is to reduce the spread of invasive species in accordance with E.O. 13112.

**Public Law 106-224 – Plant Protection Act**
Invasive species populations have the potential to spread in the project area. The purpose of my Decision is to reduce the spread of invasive species in accordance with P.L. 106-224.

**Roadless Area Conservation Rule**
Alternative 2 does not propose any timber harvesting, road building or any type of road modification. Therefore, the Roadless Rule does not apply to my Decision.

**Administrative Review and Objection Rights**
Pursuant to 36 CFR 218 Subparts A and B, this decision was subject to a pre-decisional administrative review ("objection") process. A legal notice announcing the beginning of the 45-day objection period was published in the Anchorage Daily News on April 7, 2014. The draft decision notice provided detailed information on the objection process. Individuals who submitted a comment regarding the proposed project during any designated opportunity for public comment and whose comment contained the required elements outlined in 36 CFR 218.8 were eligible to file an objection. No objections were received for this project.

**Final Decision and Implementation**
No objections were filed for this project, therefore in accordance with 36 CFR 218.12(c)(2) the final Decision Notice may be signed no earlier than five business days after the end of the objection period. Once the Decision Notice is signed, project implementation may begin.

**Contact**
For further information concerning this Decision, contact Betty Charnon during normal business hours at 907-783-3242.

---

**Signature**

**Tom Malecek**
District Ranger
Seward Ranger District
Chugach National Forest

Date: 5/30/14

**Signature**

**Tim Charnon**
District Ranger
Glacier Ranger District
Chugach National Forest

Date: 5/30/14
Appendix 1: Project Design Criteria

The following items are listed as design criteria that were developed to ensure the responsible use of herbicide and to minimize potential impacts associated with alternative 2, the proposed action.

♦ Herbicides application will target non-native species that do not respond to manual control methods. Manual control methods will continue to be used on species that respond well to those types of treatments. (All Resources)

♦ All applications of herbicides will adhere to required and recommended restrictions on the labels. (Human Health)

♦ The lowest application rate recommended for effective control of a given species will be used. (Human Health)

♦ Herbicides will be applied from hand carried or backpack equipment. Target species will be spot treated with hand-held applicators. (Human Health)

♦ Any chemical used for treatment will be covered in the risk assessment for herbicide use (see Table 4) or other more current USDA risk assessments as they become available. (Human Health)

♦ No spraying will occur within 60 feet of an Alaska Region sensitive plant population. Monitor known populations of Papaver alboroseum closest to proposed treatment areas for three years after treatment. (Botany)

♦ No spraying will occur when the wind velocity is greater than 10 MPH to reduce off-site drift. (All Resources)

♦ No spraying will occur within 100-feet of surface water when using a terrestrial formulation of glyphosate herbicide (potentially with POEA surfactant). An aquatic formulation of glyphosate would be used up to 25 feet of surface water. Although an aquatic formulation is labeled safe to use around water, the 25-foot buffer has been added as an extra layer of caution. The aminopyralid herbicide can be applied up to 15-feet of surface water body. Label restrictions for aminopyralid state that this herbicide can be used to water’s edge, however, the extra 15-foot buffer has been included as an added layer of caution. Surface water includes flowing streams, wetlands, wet meadows and standing bodies of water. (Aquatic)

♦ Spraying will not occur during times of spring and early summer snowmelt runoff, or during times of typically heavy fall rainstorms. Likewise, spraying will not occur when rain is forecasted. If during implementation weather conditions change to rain, inform a fisheries representative in order to potentially monitor the site specific application. (Aquatic)

♦ Monitoring of herbicide use will be completed on an annual basis and reported in the Forest Service corporate database, Natural Resource Information System (NRIS). CNF Ecology Staff will complete all reports at the end of the treatment season (generally in the fall) to record types and amount of herbicides applied. Daily logs will be kept within the corporate Forest database where control activities occur. These logs will include information on the type of herbicide, pounds of active ingredient applied per acre, gallons of solution applied, method of application, and location.
- A safety plan will be developed prior to herbicide use that includes an emergency spill plan, material safety data sheets for each herbicide, and identification of appropriate personal protective equipment. All workers, including contractors, will receive training to carry out the safety plan and will have a copy of the plan in their possession during herbicide use. (Human Health)

- Best management practices will be followed prior to and during implementation, as described in the Forest Service Handbook 2509.22, the Region 10 Soil and Water Conservation Handbook (USDA Forest Service, Alaska Region, 2006). BMPs applicable to this project include the following: (Aquatic)
  15.1: Pesticide Use Planning
  15.2: Follow Pesticide Label and EPA Registration Directions
  15.4: Pesticide Spill Contingency Planning
  15.5: Protection of Water Quality, Wetlands, and Riparian Areas during Pesticide Application.

- When treating at or near recreation sites or trails, post information on bulletin boards the day treatment is applied, and retain posting for up to 3 days after treatment. Describe populations treated and chemicals used, relevant toxicity information, and who to contact for more information. (Recreation)

- Identify actual treatment areas with flagging, posting, or some other physical description. (Recreation)

- If any previously undiscovered endangered, threatened, or sensitive species are encountered during the implementation of this project, notify the Glacier Ranger District wildlife biologist or botanist for consultation and recommendation of appropriate mitigating measures to be enacted. (Botany and Wildlife)

- In treatment areas within the Sqilantnu Archaeological District, the Chugach National Forest Heritage Program specialist will be consulted prior to treatment in order to identify specific areas of avoidance. (Heritage)

- Maintain a 330-foot-avoidance buffer from all active bald eagle nests identified in the wildlife specialist report during the March 1 to August 31 breeding season where disturbance within 330 feet of nests will be limited to less than 2 hours at one time. If additional bald eagle nests are located in or near the units, the wildlife biologist will be notified (USDA Forest Service 2002). Wildlife biologist will provide GPS locations of eagle nests for field avoidance of nests. (Wildlife)

- Over time as funding permits, implement educational components to help prevent introduction and spread of non-native species on the National Forest. Such actions would likely include posting pictures and/or descriptions of the target species as well as recommended precautions the public can take when they encounter invasive plants. Boot brushes may be installed at trailheads to reduce unintentional spread of invasive plants from seeds or plant parts transported by boots. Information regarding the purpose and use of boot brushes would be clearly posted. (All Resources)

- Continue coordination with the Alaska State Department of Transportation and Public Facilities in the cooperative management of non-native species along major highways and roads. (All Resources)
Appendix 2: Common Control Measures for the Kenai Invasive Plant Treatment Project

What are “common control measures?” Common control measures are different methods of treating invasive plants. They can include a wide variety of options. The challenge with invasive plants is finding the best way to control or eradicate them. Having more than one way to treat an invasive plant gives the land managers the flexibility they need to successfully address the infestation and help to restore affected ecosystems while minimizing any potential adverse effect from the treatments themselves.

Table 3 lists by species proposed common control measures that would be implemented in this project.
Table 3. Proposed target species and common control measures proposed in this project

<table>
<thead>
<tr>
<th>Target species</th>
<th>Common names</th>
<th>Scientific names</th>
<th>Proposed control measures</th>
<th>Proposed herbicide</th>
<th>Extent of infestation (occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada thistle</strong> <em>Cirsium arvense</em></td>
<td>Perennial</td>
<td>Rank: 76</td>
<td>Manually pull or dig small populations of 10 plants or less. Monitor effectiveness for 1 year and spot spray with a hand held or backpack sprayer with aminopyralid if manual control is ineffective. For populations larger than 10 plants, spot spray with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td><strong>Orange hawkweed</strong> <em>Hieracium aurantiacum</em></td>
<td>Perennial</td>
<td>Rank: 79</td>
<td>Past manual treatments on the Chugach National Forest have been ineffective in controlling this species. Spot spray plants with a hand held or backpack sprayer with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>14</td>
</tr>
<tr>
<td><strong>Butter and eggs</strong> <em>Linaria vulgaris</em></td>
<td>Perennial</td>
<td>Rank: 69</td>
<td>Manually pull or dig small populations of 10 plants or less. Monitor effectiveness for 1 year and spot spray with a hand held or backpack sprayer with aminopyralid if manual control is ineffective. For populations larger than 10 plants, spot spray with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>83</td>
</tr>
<tr>
<td><strong>Birdsfoot trefoil</strong> <em>Lotus corniculatus</em></td>
<td>Perennial</td>
<td>Rank: 65</td>
<td>Manually control this species by digging out the roots. Monitor for effectiveness. If populations are expanding then supplement manual control with spot spraying with a hand held or backpack sprayer with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td><strong>White sweetclover</strong> <em>Melilotus alba</em></td>
<td>Biennial</td>
<td>Rank: 81</td>
<td>Manually control this species by hand pulling. Ensure that a majority of the roots are extracted. Monitor for effectiveness.</td>
<td>No</td>
<td>38</td>
</tr>
<tr>
<td><strong>Yellow sweetclover</strong> <em>Melilotus officinalis</em></td>
<td>Annual or biennial</td>
<td>Rank: 69</td>
<td>Manually control this species by hand pulling. Ensure that a majority of the roots are extracted. Monitor for effectiveness.</td>
<td>No</td>
<td>21</td>
</tr>
</tbody>
</table>
## Kenai Peninsula Invasive Plant Treatment Project

<table>
<thead>
<tr>
<th>Target species</th>
<th>Common names</th>
<th>Scientific names</th>
<th>Proposed control measures</th>
<th>Proposed herbicide</th>
<th>Extent of infestation (occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed canarygrass</td>
<td>Phalaris arundinacea</td>
<td>Perennial</td>
<td>Manually pull or dig small populations of 10 plants or less. Monitor effectiveness. If manual control is ineffective on these small populations then cut or mow seed heads and spot spray with a hand held or backpack sprayer with glyphosate. For populations larger than 10 plants, cut seed heads or mow population and then spot spray with glyphosate. Spray late in the season to ensure herbicide gets translocated to the roots for maximum mortality. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>Field sowthistle</td>
<td>Sonchus arvensis</td>
<td>Perennial</td>
<td>Manually pull or dig small populations of 10 plants or less. Monitor effectiveness for 1 year and spot spray with aminopyralid if manual control is ineffective. For populations larger than 10 plants, spot spray with a hand held or backpack sprayer with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>Bird vetch</td>
<td>Vicia cracca</td>
<td>Perennial</td>
<td>Past manual treatments on the Chugach National Forest have been ineffective in controlling this species. Spot spray plants with a hand held or backpack sprayer with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>32</td>
</tr>
</tbody>
</table>

### Species listed below will primarily be treated in mineral material sites if/when they occur

<p>| Wild oats               | Avena fatua                  | Rank: not yet ranked | Monitor population to see if this species persists more than 1-2 years. If the population persists then manually pull or dig small populations of 10 plants or less. Monitor effectiveness. If manual control is ineffective on these small populations then cut or mow seed heads and spot spray with glyphosate. For populations larger than 10 plants, cut seed heads or mow population and then spot spray with glyphosate. Spray late in the season to ensure herbicide gets translocated to the roots for maximum mortality. All label instructions would be strictly adhered to. | Yes               | 3                               |
| Spotted knapweed        | Centaurea stoebe sp. micranthos | Rank: 86           | Hand pulling individual plants is the priority treatment. If needed, spot spray with aminopyralid for follow-up to hand pulling.                               | Yes               | Not yet known in project area    |
| Field bindweed          | Convolvulus arvensis          | Rank: 56           | A combination of hand pulling and spot spraying with aminopyralid would be used and monitored for effectiveness.                                                                                                  | Yes               | Not yet known in project area    |
| Narrowleaved hawksbeard | Crepis tectorum               | Rank: 56           | Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid is the priority treatment with hand pulling individual plants as needed for follow-up treatment. | Yes               | 134                             |</p>
<table>
<thead>
<tr>
<th>Target species</th>
<th>Common names</th>
<th>Scientific names</th>
<th>Growth habit</th>
<th>Invasiveness ranking</th>
<th>Proposed control measures</th>
<th>Proposed herbicide</th>
<th>Extent of infestation (occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotch broom</td>
<td>Cytisus scoparius</td>
<td><em>Scotch broom</em></td>
<td>Growth: invasive</td>
<td>Rank: 69</td>
<td>Hand pulling individual plants is the priority treatment. If needed, spot spray with a hand held or backpack sprayer with aminopyralid for follow-up to hand pulling.</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Quackgrass</td>
<td><em>Elymus repens</em></td>
<td>Quackgrass</td>
<td>Growth: invasive</td>
<td>Rank: 59</td>
<td>Manually pull or dig small populations of 10 plants or less. Monitor effectiveness. If manual control is ineffective on these small populations then cut or mow seed heads and spot spray with a hand held or backpack sprayer with glyphosate. For populations larger than 10 plants, cut seed heads or mow population and then spot spray with glyphosate. Spray late in the season to ensure herbicide gets translocated to the roots for maximum mortality. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>66</td>
</tr>
<tr>
<td>Leafy spurge</td>
<td><em>Euphorbia esula</em></td>
<td>Leafy spurge</td>
<td>Growth: invasive</td>
<td>Rank: 84</td>
<td>A combination of hand pulling and if needed, spot spray with a hand held or backpack sprayer with aminopyralid for follow-up treatment.</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Hempnettle</td>
<td><em>Galeopsis sp.</em></td>
<td>Hempnettle</td>
<td>Growth: invasive</td>
<td>Rank: 50</td>
<td>Mow and hand pull with possible application of aminopyralid as needed.</td>
<td>Yes</td>
<td>18</td>
</tr>
<tr>
<td>Meadow hawkweed</td>
<td><em>Hieracium caespitosum</em></td>
<td>Meadow hawkweed</td>
<td>Growth: invasive</td>
<td>Rank: 79</td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid as the priority treatment. Using tarps and hand pulling as needed for follow-up treatments.</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Narrowleaf hawkweed</td>
<td><em>Hieracium umbellatum</em></td>
<td>Narrowleaf hawkweed</td>
<td>Growth: invasive</td>
<td>Rank: 51</td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid as the priority treatment. Using tarps and hand pulling as needed for follow-up treatments.</td>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td>Fall dandelion</td>
<td><em>Leontodon autumnalis</em></td>
<td>Fall dandelion</td>
<td>Growth: invasive</td>
<td>Rank: 51</td>
<td>Past manual treatments on the Chugach National Forest have been ineffective in controlling this species. Spot spray plants with a hand held or backpack sprayer with aminopyralid. All label instructions would be strictly adhered to.</td>
<td>Yes</td>
<td>71</td>
</tr>
<tr>
<td>Oxeye daisy</td>
<td><em>Leucanthemum vulgare</em></td>
<td>Oxeye daisy</td>
<td>Growth: invasive</td>
<td>Rank: 61</td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid as the priority treatment. Hand pulling as needed for follow-up treatments.</td>
<td>Yes</td>
<td>248</td>
</tr>
</tbody>
</table>
### Target species

<table>
<thead>
<tr>
<th>Common names</th>
<th>Scientific names</th>
<th>Proposed control measures</th>
<th>Proposed herbicide</th>
<th>Extent of infestation (occurrences)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purple loosestrife</td>
<td><em>Lythrum salicaria</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid is the priority treatment. Using tarps and hand pulling as needed for follow-up treatments.</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Bohemian Knotweed</td>
<td><em>Polygonum x bohemicum</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid is the priority treatment. Stem injection may be used as an alternate treatment. (3 milliliters per stem).</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Black bindweed/wild buckwheat</td>
<td><em>Polygonum convolvulus</em></td>
<td>Hand pulling individual plants would be priority treatment. Follow up with hand spot spraying of aminopyralid as needed.</td>
<td>Yes</td>
<td>19</td>
</tr>
<tr>
<td>Japanese knotweed</td>
<td><em>Polygonum cuspidatum</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid while flowering is the priority treatment. Stem injection may be used as an alternate treatment. (3 milliliters per stem).</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Giant Knotweed</td>
<td><em>Polygonum sachalinense</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid while flowering is the priority treatment. Stem injection may be used as an alternate treatment. (3 milliliters per stem).</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Stinking willie</td>
<td><em>Senecio jacobaea</em></td>
<td>Hand pulling and mowing prior to flowering would be the priority treatment. Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid.</td>
<td>Yes</td>
<td>Not yet known in project area</td>
</tr>
<tr>
<td>Common tansy</td>
<td><em>Tanacetum vulgare</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer aminopyralid is the priority treatment. Hand pulling will be used as needed.</td>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td>Sentless false mayweed</td>
<td><em>Tripleurospermum perforatum</em></td>
<td>Spot spraying individual plants with a hand held or backpack sprayer with aminopyralid is the priority treatment. Hand pulling will be used as needed.</td>
<td>Yes</td>
<td>28</td>
</tr>
</tbody>
</table>
Appendix 3: Response to Comments

Comment 1: Oversized buffers around aquatic environments

"My only concern with the plan is the significantly increased aquatic buffer zones the USFS has placed on the use of the aquatic glyphosate compound and aminopyralid herbicide. Since the Environmental Protection Agency did not restrict the chemical composition in these aquatic settings (up to water’s edge for aminopyralid and use in aquatic environments for the aquatic glyphosate) it seems like an unreasonable caution to add 15-25 foot buffers to this situation. If additional buffer zones are deemed necessary, what about a smaller zone 3-5 feet where other treatments could be used? It is unlikely that drift would occur for more than several feet from a responsible user of a backpack sprayer in the environmental conditions outlined in your plan (winds of less than 10 MPH)."

Response:
Although the EPA did not restrict the chemicals around aquatic areas, buffers were added as an extra layer of caution to ensure impacts to aquatic species and habitat are minimized (EA pg. 21-22). The distances were based on references that indicate at a distance of 25’ evidence of drift is negligible. These buffers do not preclude other management techniques including manual and mechanical control.

Comment 2: Unknown effects

"There really ought to be something mentioned about the possible unknown effects, as yet to be discovered by science. DDT is good example of how confident we are as a society about chemistry and the ecosystem, until we inevitably evolve to have more understanding and knowledge. Let’s not make this same mistake in the pristine Chugach by listening to the data created by the companies selling the herbicides."

Response:
The commenter seems to indicate that the only data available has been supplied by companies selling herbicides and that there are possible unknown effects of using these herbicides. The existing information for this analysis comes from a wide variety of sources and not just the companies producing these herbicides. For this analysis, the Forest Service relies heavily on Risk Assessments conducted by Syracuse Environmental Research Associates, Inc. (SERA 2003, 2007, and 2011). Glyphosate is one of the most widely used herbicides in the country and has been extensively studied. The original Risk Assessment for glyphosate (SERA 2003) was updated in 2011 (SERA 2011) in order to incorporate the extensive literature available, the availability of numerous formulations, and the use of surfactants. These Risk Assessments along with the Risk Assessment for aminopyralid reference hundreds of studies and provide some of the most thorough and comprehensive information for these herbicides. Even with the extensive information available the Forest Service recognizes that limitations in our information do exist and disclose these limitations in the EA on pages 11-13.

Comment 3: Use prevention and education over herbicides

"I think prevention and education of users is the best approach, before spraying toxins. Why not have bleach soaked rugs on the steps at Spencer Whistle stop? Perhaps, hold a free guides training in the spring for permitted outfitters to have tools to educate our clients? If nothing else, there is absolutely zero excuse not to self-police NFS staff’s boots and vehicles with bleach baths."

Response:
The Forest Service agrees that prevention and education are some of the best tools for invasive plant management. As a result, such measures have been conducted on the Chugach National Forest over
the past 10 years. For example, invasive plant information and pamphlets are already provided to outfitter/guides along with requirements to clean equipment and gear before entering the national forest. The Forest Service also requires its own staff to clean equipment and gear before conducting work. The Chugach National Forest has conducted numerous workshops, field visits, community weed pulls, and classroom talks to educate the public about invasive species. The EA for this project also encourages expanding education as one of the Project Design Criteria, "over time as funding permits, implement educational components to help prevent introduction and spread of non-native species on the National Forest. Such actions would likely include posting pictures and/or descriptions of the target species as well as recommended precautions the public can take when they encounter invasive plants. Boot brushes may be installed at trailheads to reduce unintentional spread of invasive plants from seeds or plant parts transported by boots. Information regarding the purpose and use of boot brushes would be clearly posted (EA page 10)". The Forest Service already plans on installing boot brushes and informational signs at some trailheads to help reduce introduction and spread of invasive species.

However, prevention and education activities do not address the purpose and need of the project, which is to reduce the extent of existing invasive plant infestations. The Forest Service already uses manual and mechanical control methods to manage invasive plants, but often those methods are not effective. Herbicides add another effective tool in controlling and eradicating invasive plant infestations.

Regarding the specific reference to bleach baths, there is no evidence that bleach is an effective tool in invasive plant management. Bleach is a caustic substance that could be toxic to aquatic and terrestrial organisms. In addition, the Forest Service can only use pesticides according to published labels registered with the EPA and other management direction and bleach has not been not properly assessed or labeled for Forest Service use.

Comment 4: New information

"Here is a study (published in Sept ‘13, newer than your 2003 data) which shows that glyphosate is more mobile and occurs more widely in the environment than was previously thought: [link]"

Response:
Upon review of the reference provided, we found this article refers to studies conducted in urban parks or agricultural areas (Washington DC, Maryland, and Iowa) and concerns that glyphosate was reaching vernal pools and streams. The studies were conducted in urban parks and agricultural areas where use of glyphosate in the surrounding area is far more extensive and likely lack buffers around water bodies. The situations described in these studies are not directly comparable to this project. Additionally, our proposal includes buffers around water-bodies as an extra layer of caution. Other main studies referenced in this article have already been included in the risk assessments (SERA 2003 and 2011) used in our analysis and are not considered new information. Therefore, the EA and specialist reports for the Kenai Invasive Plant project already incorporate this information in the analysis.

Comment 5: Effects on salmon roe and ecosystem

"Even spot applications MIGHT have deleterious effects on salmon roe and the ecosystem."

Response:
This is an opinion statement. Effects to fish and fish habitat have been analyzed and are found in the EA and fisheries specialist report (EA pages 23-24).
Comment 6: Kenai wood frogs

"Are you familiar with the toxicity studies on the Kenai wood frogs?"

Response:
Toxicity studies on the Kenai wood frog have been conducted on the Kenai National Wildlife Refuge area for over a decade. Studies seem to indicate numerous causes leading to wood frog deformities (Reeves et al. 2010). Many studies have been focused on the oil fields and proximity to roads. Some of the main stressors that appear to affect the wood frog include toxic metals (i.e. copper and iron) and organic compounds such as PCB’s and DDT (Reeves et al. 2010). In addition, there is also information suggesting other potential causes such as the chytrid fungus and also predation by dragon fly larvae. None of the studies target glyphosate or aminopyralid as potential causes of wood frog deformities. The project design criteria to protect aquatic habitats would also ensure that impacts to wood frog are minimal (Dr. Mari Reeves, pers. comm. 2014).

Comment 7: Insufficient range of alternatives

"But this EA falls short of the NEPA obligation to “[r]igorously explore and objectively evaluate all reasonable alternatives.”"

“There is only one action alternative analyzed. This indicates the Responsible Official wants no alternatives to be evaluated that might compete with and jeopardize her selected alternative.”

“The single action alternative fails to address other legal obligations to protect clean water, to maintain habitat for sensitive and subsistence species and to manage forest for multiple uses … with living wildlife and fish.”

“The range of alternatives does not conform to NEPA’s requirements or court precedent.”

“Request for final NEPA document modifications: Please analyze in detail and display the effects in Chapter 3 of another action alternative to the Proposed Action that would use all methods of noxious weed eradication except herbicides that contain glyphosate. This alternative will meet the objectives of a legally written P&N that’s not written to exclude reasonable alternatives to the Proposed Action.”

Response:
The commenter indicates that the range of alternatives is inadequate, pre-decisional and does not meet NEPA’s requirements. He states that the existence of only one action alternative does not address other legal obligations to evaluate reasonable alternatives and protect natural resources. He requests that the EA analyze in detail “another action alternative that would use all methods of noxious weed eradication except herbicides that contain glyphosate” and indicates that this would then meet the legal obligation to consider reasonable alternatives.

As stated in the EA (p. 4-6), the forest is currently using a number of means for controlling invasive weeds, including hand pulling and other non-chemical methods. For this particular project, the “no action” alternative is “no change” from current management direction. It includes continuing manual control efforts in the project area except for in some administrative locations where herbicide use was already approved in earlier project-specific analyses. This is explained in the Purpose and Need of the EA and in the description of the “no action” alternative. Therefore, an alternative was analyzed in detail that uses manual methods, but does not use herbicides to treat invasive species in any areas where herbicide use has not already been approved.

Because many of the infestations on the Chugach are very small, there is a unique opportunity to not only keep these infestations at or below their current populations, but to get rid of them entirely. Manual methods have not proven to be effective at eliminating these populations, and will require constant long-term work to keep them from growing. With such small populations, a small amount of spot-applied herbicide has proven to be extremely effective at getting rid of the entire infestation (EA, p. 2-4).
The EA has been clarified that glyphosate would only be used on grasses (reed canarygrass, wild oats, and quackgrass) since these species cannot be effectively eradicated using aminopyralid or manual control methods. (see Table A-1 in EA Appendix 1). Glyphosate would only be considered for use on reed canarygrass in the project area and wild oats and quackgrass in mineral sites. As stated in the table, for species and populations where non-chemical methods may work, the non-chemical treatment is the priority choice. An action alternative that does not include glyphosate would not meet the need for action identified for this project because the other herbicides considered for use are not effective at controlling all of the invasive species in the project area. The range of alternatives is consistent with NEPA requirements as all of the issues identified during scoping were effectively addressed with the two alternatives that were analyzed in detail (an alternative that uses herbicides and one that does not). Additional design criteria were developed to minimize potential impacts associated with Alternative 2 (EA, pp. 9-10). The EA discloses effects of both alternatives on the resources mentioned by the commenter.

Comment 8: Impacts to aquatic life

"Glyphosate kills aquatic life even if the concentrations of the chemical in water are very low. The fish deaths will occur in the streams in the project area and a few miles downstream. Herbicide mist should never be allowed to contact water ... even so-called aquatic-safe herbicides."

Response:

Glyphosate is a widely used herbicide and has been extensively studied. Risk assessments for glyphosate (SERA 2003 and 2011) indicate that glyphosate formulations have hazard quotients that are generally far below a level of concern for fish. The project design criteria include buffers around open water along with other criteria that would minimize or eliminate risks of glyphosate to aquatic organisms and their habitats. As an added layer of caution, the Forest Service has included buffers on even aquatic formulations of glyphosate (ie Aquamaster), which is considered a “less toxic formulation” in the latest risk assessment (SERA 2011). The buffers around aquatic areas are 25’ for glyphosate, a distance at which evidence of herbicide drift is negligible. Based on these precautions, the extensive studies in the risk assessment, and the effects disclosed in the EA (pg. 20-21), there would be no measureable effect on the aquatic environment.

Comment 9: Impacts to mammals and humans from contact with glyphosate

"Literature authored by independent scientists not connected with Monsanto or the USFS indicates mammals that eat contaminated foliage and humans that might brush against contaminated foliage or eat contaminated berries have been known to suffer from the following as a result of glyphosate contact: birth defects, non-Hodgkin’s lymphoma, mitochondrial damage, cell asphyxia, miscarriages, attention deficit disorder endocrine disruption, DNA damage, skin tumors, thyroid damage, hairy cell leukemia, Parkinson disease, premature births, decrease in the sperm count, harm to the immune system in fish death of liver cells, severe reproductive system disruptions and chromosomal damage."

Response:

Glyphosate is a frequently used herbicide in Alaska. The Project Design Criteria, including buffers, are designed to minimize or eliminate risks of herbicide use. The EA has been clarified so that glyphosate would only be used for one priority species (reed canarygrass), and two species in mineral material sites (wild oats and quackgrass). The EA concluded that based on the best available science, herbicide exposure from this project would not affect human health (pg. 13-17). The websites and literature cited by the commenter were reviewed and no new or opposing science regarding glyphosate was found (Marchowsky and Charnon 2014). Studies linking glyphosate to cancer, neurological
The following links provide additional scientific proof that glyphosate-containing herbicides are likely to cause bee Colony collapse disorder (CCD) that’s currently driving bees extinct. Please disclose this information in Chapter 3 of the final EA and if available provide scientific information showing why this is untrue.”

Response:
The links provided by the commenter were reviewed and no new or opposing science regarding glyphosate was found (Marchowsky and Charron 2014). Colony collapse disorder refers to alarming declines in commercial honeybees. Suspected causes include environmental and nutritional stress; new and/or re-emerging pathogens; pests that attack bees; and pesticides (including insecticides, miticides, and fungicides) (S. Bautista, pers. comm.). Herbicides may also impact honeybees, but the likelihood of impacts resulting from this project is extremely low for the following reasons: treatments are located far from commercial beehives; even if a beehive is nearby, spot spray methods are patchy, limiting exposure to honeybees; and in general herbicides have a low toxicity to honeybees. It is only
at the highest dose level of glyphosate that any impacts occurred, and this only occurred with a direct spray at the highest rate (Bautista 2005). The highest dose level is never used in this project and the spot spray method further reduces chances that honeybees (if they even occur in the project area) would be directly sprayed. Effects to terrestrial invertebrates such as the honeybee have been analyzed in the wildlife specialist report for this project and supporting documentation (SERA 2003 and 2011, Bautista 2005). These documents show there is low potential for glyphosate to affect terrestrial invertebrates.

**Literature Cited**


