

Hawkweed, Camp Island, Karluk Lake, July 29, 2002



Restored site, Camp Island, Karluk Lake, July 20, 2019

A RAPID RESPONSE PLAN FOR INVASIVE TERRESTRIAL AND EMERGENT PLANTS

UNITED STATES FISH AND WILDLIFE SERVICE, ALASKA REGION
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Invasive Plant Rapid Response Plan

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Front page photo of Orange Hawkweed on Camp Island prior to eradication (top right) and after treatment (bottom left). Photo credit: Bill Pyle, USFWS.

INTRODUCTION TO INVASIVE PLANTS IN ALASKA

Unlike the contiguous US, much of Alaska remains relatively free of problematic invasive plant species. Presently, many of the non-native plant species that have established in Alaska remain mostly constrained to disturbed areas like roadways, construction sites, and urbanized areas (Carlson et al. 2008). However, with habitat conditions across the state becoming more favorable for the introduction and establishment of invasive plants (e.g., increasing human disturbance, warmer annual temperatures, longer growing seasons (Carlson and Shepard 2007, Mulder and Spellman 2019), terrestrial invasive plants are now beginning to spread beyond these historically confined areas and into wildland systems. Without concerted efforts to limit the spread and eradicate new populations of invasive species as they are identified, Alaska's relatively pristine landscapes are likely to become increasingly degraded by invasive plant species.

Invasive plants can displace native species, alter community composition, and can influence ecosystem processes and functions (Cronk and Fuller 1995, Walker and Smith 1997, Cox 1999, Carlson et al. 2008), and thus also have potential to impact subsistence, economic, agricultural, and cultural resources. Not all non-native plants become problematic "invasive" species. In Alaska, efforts have been made to identify the plant species most likely to cause significant impacts to native ecosystems. This invasiveness ranking system, developed by Carlson et al. in 2008, gives each species an invasiveness score on a scale of 0-100, with larger values representing a higher invasion probability. Species with scores 70–79 are considered "Highly Invasive", and those with scores ≥ 80 are "Extremely Invasive". Particular focus should be placed on limiting or responding to species that fall within these two categories. If new populations or occurrences of species with a high or extreme likelihood of becoming invasive are documented, the rapid response actions outlined in this plan will help limit these species before they can cause serious ecological or economic harm in Alaska. In particular, the goal of these rapid response actions is always eradication whenever possible.

Specific response tools to eradicate or control an infestation will vary based on the biology of the species being targeted, as well as the circumstances of the infestation. We define an infestation as a localized established (recruiting or reproducing) population of a single or multiple plant species. In this document, we provide guidance for treatment options for some of the most widespread invasive plant species found in Alaska, as well as for some species with a high likelihood of becoming invasive in the state. In particular, this document focuses on terrestrial and emergent invasive plants. Separate direction for submerged aquatic invasive plant species can be found in the Alaska Regional *Elodea* Rapid Response Plan.

Regardless of the specific response or treatment actions, this document provides a framework for identifying partners, establishing leadership structures, directing communication, and moving through the regulatory permitting process. By streamlining these steps, we hope to enable rapid and efficient response to a multitude of invasive plant species, thereby limiting the impact they may have on Alaskan ecosystems.

The goal of this document is to consolidate information and facilitate communication within the United States Fish and Wildlife Service (Service), as well as among Service partners. Many actions outlined in this document are specific to the Service, and may not be relevant for other agencies or organizations. However, the framework and specific tasks outlined within the document can be modified to reflect the mandates, authorities, and jurisdictions of other agencies or organizations.

Step 1: Advanced preparation

□ **STEP 1: ADVANCE PREPARATION FOR RESPONSE TO INVASIVE PLANTS**

This step outlines actions that should be taken now to increase capacity to respond to reports of highly or extremely invasive plants in Alaska. While some of these tasks are specific to the Service, the document provides guidance for working with other agencies to complete these steps. Other agencies can adopt this framework as appropriate to be prepared to respond to invasive plants in Alaska.

Step 1 Strategic Tasks

- 1) Review existing Integrated Pest Management (IPM) plans for known and potential invasive plants, and familiarize oneself with the IPM approach to understand the suite of options available for invasive plant eradication and control in Alaska.
 - a) Integrated pest management is a sustainable approach to managing pests that utilizes a variety of tools to minimize health, environmental, and economic risks.
 - b) See further information about [Integrated Pest Management here](#). Contact the Service Integrated Pest Management Coordinator for further detail ([Tool 1.1](#)).
- 2) Limit spread of invasive plants by familiarizing yourself with [Play, Clean, Go](#) and learn to identify known and potential invasive plant species in Alaska. See [Tool 1.2](#) for information. Best management practices to reduce risk of spread of invasive terrestrial plants can be found in [Tool 1.3](#).
- 3) Designate individuals to receive Hazard Analysis and Critical Control Point (HACCP) training. Develop a HACCP plan to limit spread of terrestrial plant seeds and propagules when completing Service activities.
 - a) HACCP planning is a management tool that provides a structured method to identify risks and focus procedures, and is being successfully used in natural resource pathway activities.
 - b) Understanding pathways and developing plans to reduce non-target species and prevent biological contamination is necessary to avoid unintended spread of species. Further information regarding HACCP planning is provided in [Tool 1.4](#).
- 4) Designate individuals to receive Certified Pesticide Applicator Training from the Alaska Department of Environmental Conservation (ADEC) focusing on categories relevant to the sites and species which will be targeted for application, see [Tool 1.4](#).
 - a) If herbicides are found to be the preferred option for invasive plant response, this certification is required to apply pesticides of any kind in the state of Alaska.
 - b) Refuges and Fish and Wildlife Field Offices (FWCOs) should designate at least one individual to obtain ADEC pesticide applicator certification. This certification is good 1-3 years depending on test scores, and applicators must be [re-certified upon expiration](#).

Step 1: Advanced preparation

Step 1 Roles and Responsibilities

- Funding from the Regional Office may be available to support Pesticide Applicator and HACCP trainings for Service staff. Contact the Alaska Region’s Regional Invasive Species Program Coordinator or their alternate, the Sub-Regional EDRR Program Managers for information ([Tool 1.1](#)).

Step 1 Tools

Tool 1.1. Service Contacts

| Role | Name | Contact Info |
|--|-----------------|---|
| Regional Invasive Species Coordinator | Aaron Martin | aaron_e_martin@fws.gov Cell: (907) 378-0568 Office: (907) 786-3510 |
| Sub-Regional EDRR Program Manager (interior/northern Alaska) | Lisa Dlugolecki | lisa_dlugolecki@fws.gov Cell: (907) 251-5959 Office: (907) 455-1840 |
| Sub-Regional EDRR Program Manager (southcentral/southwestern Alaska) | Ben Wishnek | benyamin_wishnek@fws.gov Cell: 907-251-0692 |
| Regional Integrated Pest Management Coordinator | Angela Matz | angela_matz@fws.gov (907) 786-3483 |

Tool 1.2. Resources for Identifying Non-Native Plants in Alaska

[Invasive Ranking System for Non-Native Plants in Alaska](#)

[Identification Guide for Non-Native Plants in Alaska](#)

[Introduction to Common Native & Potential Invasive Freshwater Plants in Alaska](#)

This ID guide contains examples of emergent aquatic invasive plants

Tool 1.3. Preventing Spread of Invasive Plants

[Preventing the Spread of Invasive Plants: Best Management Practices Developed by the State of California](#)

[Guidelines for Preventing the Spread of Aquatic Invasive Species, U.S. Fish and Wildlife Service, Region 7, Anchorage, AK June 2018.](#) This document provides information relevant to reducing spread of emergent invasive plant species.

Tool 1.4. Training Information Links

[HACCP Training Information](#) and the [link to the HACCP Template](#)

[ADEC Certified Pesticide Applicator Training Information](#)

Step 2: Report and verify sighting

□ **STEP 2: REPORT AND VERIFY SIGHTINGS**

This step outlines the process to report a sighting of a suspected invasive plant and verify the species identity. Take these actions as soon as the suspected invasive plant is observed, whether on or off Service lands. Suggested reporting guidance for non-Service employees is also provided.

Step 2 Strategic Tasks

- 1) Report sighting.
 - a) Report sightings made by Service employees, those that impact Service lands, and/or as part of projects funded by the Service following the normal chain of command at a Refuge or Field office **and** also contact regional invasive species staff (Invasive Species Program Coordinator, EDRR Program Manager, contact information in [Tool 1.1](#)).
 - b) Report sightings off of Service lands as appropriate to a given agency ([Tool 2.1](#) and [Tool 2.2](#)), and contact the Alaska Department of Natural Resources (ADNR) Invasive Plant Coordinator ([Tool 2.1](#)).
- 2) Verify sighting.
 - a) Experts at the Alaska Exotic Plants Information Clearinghouse (AKEPIC) and in the Service Regional Office can help with plant identification ([Tool 2.3](#)) as needed.
 - b) Additional plant identification information is available in [Tool 1.2](#).
- 3) Report verified sighting regionally.
 - a) Once verified, report sightings to the AKEPIC database. Service employees should work with Regional invasive species staff to accomplish this task.
 - b) However, AKEPIC maintains data for public lands. Local CWMA's likely maintain databases and records of plant infestations on private lands.
 - c) If found during the fire season, the local supervisor should also work with a Regional contact and/or the Refuge Fire Management Officer to inform the Bureau of Land Management Alaska Fire Service, the US Forest Service, and ADNR Division of Forestry Wildlife Fire and Aviation Program if applicable.

Step 2: Report and verify sighting

Step 2 Tools

| Tool 2.1. Non-Service Contacts | | | | |
|---|---|--------------------------|------------------------------------|--|
| Agency | Role | Region | Name | Contact Info |
| Alaska Department of Natural Resources, Division of Agriculture | Invasive Plant and Agricultural Pest Coordinator | All of AK | Daniel Coleman | daniel.coleman@alaska.gov (907) 754-8721 |
| Alaska Department of Transportation | | | | Contact local ADOT office |
| Bureau of Land Management, Alaska State Office | Alaska Wildlife and Threatened & Endangered Species Program | All of AK | Casey Burns | ctburns@blm.gov (202) 912-7074 |
| Bureau of Indian Affairs | Natural Resource Manager | All of AK | Keith Kahklen | keith.kahklen@bia.gov (907) 586-7618 |
| Fairbanks Soil and Water Conservation District | Invasive Plant Specialist | Interior AK | Aditi Shenoy | aditi.shenoy@gmail.com (907) 479-1213 ex. 104 |
| Homer Soil and Water Conservation District | Invasive Species Program Manager | Southern Kenai Peninsula | Katherine Schake | katherine@homerswcd.org (907) 235-8177 ex. 5 |
| Kodiak Soil and Water Conservation District | Programs Coordinator | Kodiak Archipelago | Blythe Brown | blythe.brown@kodiaksoilandwater.org (907) 486-5574 |
| National Park Service | Exotic Plant Management Team Liaison | All of AK | Vacant Grant Hilderbrand (contact) | grant_hilderbrand@nps.gov (907) 644-3572 |
| Tyonek Tribal Conservation District | TTCD Conservation Director | Game Mgmt Unit 16B | Nicole Swenson | nswenson@tyonek.com (907) 646-3110 |
| University of Alaska Fairbanks Cooperative Extension Service | Invasive Plants Instructor | All of AK | Gino Graziano | gagraziano@alaska.edu (907) 786-6315 |
| USDA Forest Service | Invasive Plant Program Coordinator | All of AK | Betty Charnon | betty.charnon@usda.gov (907) 743-9456 |
| USDA Natural Resources Conservation Service | Alaska Native Technical Liaison | All of AK | Ryan Maroney | ryan.maroney@ak.usda.gov (970) 761-7756 |

Step 2: Report and verify sighting

Tool 2.2. Non-Service Invasive Species Management Policies

[Alaska Department of Transportation and Public Facilities Integrated Vegetation Management Plan](#), revised April 2020.

[Bureau of Land Management – Alaska Invasive Species Management Plan 2010.](#)

[National Park Service Alaska Region Invasive Plant Management Plan, 2009.](#)

Tool 2.3. Contact Information for Plant Identification Assistance

| Role | Name | Contact Info |
|--|------------------|--|
| AKEPIC, Lead Botanist | Justin Fulkerson | jrfulkerson@alaska.edu (907) 786-6387 |
| University of Alaska Cooperative Extension, Invasive Plants Instructor | Gino Graziano | gagraziano@alaska.edu (907) 786-6315 |
| US Forest Service, Invasive Plant Program Coordinator | Betty Charnon | betty.charnon@usda.gov (907) 743-9456 |

Tool 2.4. AKEPIC Data Entry Form

[Alaska Exotic Plant Information Clearinghouse \(AKEPIC\)](#)

[Download the AKEPIC Data Entry Form here](#) and submit the completed form to:
uaa.aknp@alaska.edu

[AKEPIC User’s Manual](#) provides direction, and the [AKEPIC Data Dictionary](#) identifies fields and requirements for entry. The local supervisor should work with the Regional contact (for example the Sub-Regional EDRR Program Manager) when submitting information to AKEPIC.

Step 3: Form response team

□ **STEP 3: FORM RESPONSE TEAM**

If appropriate to circumstances, a designated Incident Response Team will be assembled to enact the response for verified sightings. This step provides guidance for assembling this team. Small localized infestations may not require the full incident command structure outlined here. Work with Regional contacts and partners to determine the level of response needed based on the size, location, and plant identity. Regardless of if an incident command structure is followed, due to overlapping jurisdictions and limited capacity for any one agency to address invasive species efforts statewide, a successful response will benefit from including multiple partners.

Step 3 Strategic Tasks

- 1) Identify key partners to form the response team.
 - a) This team should include private land owners and/or members from Cooperative Weed Management Areas (CWMA), Cooperative Invasive Species Management Areas (CISMA) or Soil and Water Conservation Districts (SWCD) ([Tool 3.1](#)) as consulting members to ensure buy-in from affected stakeholders and to serve as liaisons with their neighbors.
 - b) Ensure that the response team includes individuals with relevant training. For example, ADEC certified pesticide applicators will be needed if a response involves herbicides.
- 2) Assign leadership, define roles and responsibilities ([Tool 3.2](#)).
 - a) The rapid response process will be most successful if local responders (Refuge or FWCO biologists/CWMAs) take ownership and direct actions as they have the connections and local knowledge that will best enable a rapid response. These people may not necessarily be from the Service, depending on the location of the infestation.
 - b) Guidance for the minimum leadership roles that should be identified are listed in [Tool 3.2](#). Other partners may be involved but may not have defined roles or additional roles can be identified to reflect specific circumstances.

Step 3 Roles and Responsibilities

- If an infestation is on Service lands or the Service will fund or participate in the response, contact the Regional Integrated Pest Management Coordinator to discuss herbicide use ([Tool 1.1](#)). If herbicides will be used off of federal lands, ADEC will need to be involved, as well as a local partner/organization to acquire ADEC pesticide use permits, and ADEC Certified Applicators.
- Depending on the location of the infestation, private landowners and other parties (Alaska Native partners, other federal and state agencies) may not be directly involved in the response process. However, if the infestation could have impacts on lands managed by these agencies/individuals, such partners should always be included in regular communication.

Step 3: Form response team

Step 3 Tools

Tool 3.1. Alaska CWMAs and SWCDs

| | |
|---|---|
| <p>Cooperative Weed Management Areas</p> <p>Links</p> <p>Anchorage CISMA</p> <p>Copper River CWMA</p> <p>Fairbanks CWMA</p> <p>Juneau CWMA (site under development)</p> <p>Kenai Peninsula CWMA</p> <p>Northern Lynn Canal CWMA</p> | <p>Soil and Water Conservation District</p> <p>Links</p> <p>Anchorage SWCD</p> <p>Southeast SWCD</p> <p>Fairbanks SWCD</p> <p>Homer SWCD</p> <p>Kenai SWCD</p> <p>Copper River Valley SWCD</p> <p>Kodiak SWCD</p> <p>Mid-Yukon Kuskokwim SWCD</p> <p>Palmer SWCD</p> <p>Salcha-Delta SWCD</p> <p>Upper Susitna SWCD</p> <p>Wasilla SWCD</p> |
|---|---|

Tool 3.2. Definitions and Duties for Key Leadership Roles

1) Response Plan Implementation Coordinator

The Response Plan coordinator should be pre-designated to provide the leadership needed to avoid confusion (see [Step 6](#)). They will determine the status of the rapid response and monitor the situation to determine if additional involvement of other participating agencies is needed. This individual will likely direct both the site assessment and the implementation of control efforts. This individual is not necessarily the same individual, or even from the same agency, as that which provided the initial report and verification.

Name: **Agency:** **Contact Information:**

For verified reports on Service lands, this position may be filled by:

- Refuge Biologist or Refuge Manager
- Regional Invasive Species Program Coordinator
- Sub-Regional EDRR Program Manager
- FWCO Biologist or Project Leader

For verified reports not on Service lands, this position may be filled by:

- Invasive Species Coordinator or Natural Resource Specialist from appropriate federal/state/local/Alaska Native groups.

2) Central Communication Coordinator

Keeps all primary points of contacts at local, state, federal and Alaska Native organizations affected by the response actions informed of plan and actions. Communication with the broader public and the media should go through the Public Communication officer unless the response team decides otherwise.

Name: **Agency:** **Contact Information:**

For verified reports on Service lands, this position may be filled by:

Step 3: Form response team

- Regional Invasive Species Program Coordinator
- Sub-Regional EDRR Program Manager
- Refuge Manager (or their alternate)
- FWCO Project Leader (or their alternate)

For verified reports not on Service lands, this position may be filled by:

- ADNR Invasive Plant and Agricultural Pest Coordinator
- Invasive Species Coordinator/Natural Resource Specialist from appropriate federal/state/SWCD/Alaska Native group (see [Tool 2.2](#))

3) Public Communication Coordinator

The Public Communication Coordinator(s) delivers timely and consistent messages with other agencies and to the public and to the media. Contradictory or conflicting messages weaken public faith in agency actions and decision making.

Name: **Agency:** **Contact Information**

This position may be filled by:

- Service External Affairs
- Respective program outreach staff from the agency leading the response

Step 4: Site assessment & risk reduction

□ **STEP 4: TAKE RISK REDUCTION ACTIONS, COMPLETE FIELD SURVEYS AND SITUATION ASSESSMENT**

The assembled team should now work together to implement immediate actions that will reduce the risk of spread while the situation is further assessed. This step provides resources to inform risk reduction actions, as well as further response actions outlined in Step 5 – 7.

Step 4 Strategic Tasks

- 1) Take risk reduction actions such as:
 - a) Remove flower heads if infestation is discovered prior to seed stage. Ensure that proper disposal of flower heads (i.e. burning) is possible. If flower heads are not disposed of properly, this action could increase or spread an infestation.
 - b) Pursue temporary closure of trails, campsites, etc.
 - c) Enforce and/or educate about [Play, Clean, Go](#) strategies to identify and minimize vectors.
 - d) Erect signage to alert the public.
- 2) Contact and inform land owner of infestation. Begin developing landowner agreements.
- 3) Identify additional partners for response. Begin determining permit needs (full detail in [Step 6](#)).
- 4) Communicate with the public (see Roles and Responsibilities, below).
- 5) Complete field survey and situation assessments ([Tools 4.1/4.2](#)).
- 6) Report sighting to AKEPIC if not completed in [Step 2](#).

Step 4 Roles and Responsibilities

Within-response team communication

- The Response Plan Coordinator will lead the site assessment and report back to the Central Communication Coordinator (CCC). The CCC will facilitate disseminating information to the other members of the team.
- Once the full extent of the infestation is understood, additional partners may need to be added to the response team.

Communication with the public

- Once the infestation is understood, the Public Communication Coordinator should consider working with External Affairs Program(s) to develop a press release and/or hold a public meeting outlining known information as applicable to the situation.
- At this step, a full response plan need not be developed, but the public should be aware that actions are being considered as applicable.
 - Providing information to the public as soon as possible can increase buy-in and limit challenges further down the line.
 - However, under some conditions, alerting the public too soon could hinder response efforts. The response team will make the decision of when to alert the public.

Step 5: Evaluate response options

Step 4 Tools

Tool 4.1. Field Survey Resources

AKEPIC has [developed a field data sheet](#) that can help with site assessment and submitting to the AKEPIC portal.

The following [National Wildlife Refuge System Resources for Managing Invasive Plants](#) provides information that can assist with data collection. These [Inventory and Survey Methods, Montana State University Extension and the Center for Invasive Plant Management](#) may also facilitate the field survey.

The [ArcGIS Collector](#) is a mobile GIS map that can be used to navigate to a location of an infestation, map the infestation extent, and can be used to collect point data in the format required by the AKEPIC database. The data are available in real time (with an internet connection) or soon after to multiple end users.

Tool 4.2. Situation Assessment

The following situation assessment provides a general outline which can be used to condense information from field surveys to facilitate communication among partners during Steps 5-7. The following information is minimal amount of data needed to inform an effective response plan:

- 1) Assess the size of the infested area as well as the stage of the plants (flowering, emerging, etc.) at the known location ([Tool 4.1](#) can assist).**
- 2) Identify the property landowner where the infestation was found.**
[AK State Geo-Spatial Data Clearinghouse](#)
[Land status within the National Wildlife Refuges of Alaska](#)
[Kenai Peninsula Borough Parcel Viewer](#)
- 3) Assess connectivity of infested area and extent of public access**
Note if infestation is near roadways, trails, rivers, boat launch points, airports, remote FWS administrative and research sites, BLM Alaska Fire Service stations, fire suppression areas, development, or other access points that may serve as pathways for potential spread.
- 4) Determine whether there is a need for law enforcement action or if any additional form of investigation is needed.**
- 5) Determine additional location specific risk factors or impacts that should be considered in this location** (e.g. subsistence or sport hunting use, presence of other invasive species or species of concern, floatplane or watercraft access issues including dynamic water levels, navigation hazards, is the infestation in federally designated Wilderness?)

Step 5: Evaluate response options

□ **STEP 5: EVALUATE RESPONSE OPTIONS**

In this section we outline treatment options for eradication of invasive plants, and emphasize that an adaptive [Integrated Pest Management](#) approach is the Service strategy for response. The Service's primary goal of any rapid response effort should be eradication. However, if funding does not allow for immediate eradication efforts to be pursued, rapid response actions should still be taken to limit spread (see [Step 4: Risk Reduction](#)), until such time that eradication funds become available. For infestations impacting Service managed lands, local Refuge managers/supervisory biologists, the Regional Invasive Species Coordinator/EDRR Program Manager(s), and relevant partners should make the decision together about whether to pursue rapid response actions, or to take no action.

Step 5 Strategic Tasks

- 1) Identify relevant response options. The need and scope of a response will be based on both ecological and action thresholds.
 - a. Ecological threshold: consistent with the directive ([Service policy 601 FW 3](#)), control and/or eradication action (including planning for the actions) would be initiated when one or more plants of any highly invasive species is detected on federal land and lands under Conservation Easement Agreements where the Refuge is authorized to manage habitat. As a general guideline, reports of species with a ranking >70 (according to Carlson et al. 2008) should provoke Rapid Response Actions. However, Rapid Response Actions on species with lower invasiveness scores may also be conducted depending on location and severity.
 - b. Action threshold: We would employ an action threshold when considering management of invasive plants with IPM techniques. The action threshold will depend on plant species and local conditions. For example, there are some cases where the incident response team may choose not to pursue rapid response actions (if an infestation is very small or very large, eradication is deemed untenable, and/or there are no relevant risk reduction actions to be taken).
- 2) Select among response options ([Tool 5.1](#) and [Tool 5.2](#)).
- 3) Consider any special circumstances. For example, if an infestation is located in federally designated Wilderness, additional steps are required ([Tool 5.3](#)).
- 4) Continue to re-affirm roles and responsibilities – who is in charge of each component of the response (e.g., environmental analyses, state and/or federal Pesticide Use Permit and Proposals, logistics, etc.). Further detail about permitting is found in [Tool 6.2](#).

Step 5 Roles and Responsibilities

- The selection of the response option(s) should be led by the Response Plan Implementation Coordinator, but will be made together with the response team. The Central Communication Coordinator will communicate the final decision among members of the team and partners.
- If the Service Regional Invasive Species Coordinator (or their alternate) is not actively involved in the response efforts, it is the duty of the Central Communication Coordinator to update them of progress and keep them regularly informed of resources needed.

Step 5: Evaluate response options

Step 5 Tools

The following tools outline Integrated Pest Management options for a number of invasive plant species that are currently, or are hypothesized to become, problematic in Alaska. **Note:** this list is not a definitive list of all potentially invasive plant species in Alaska, and may be revised in the future. Many CWMA's also maintain lists of problematic species for local areas. Reference the [AKEPIC website](#) for updated detail regarding invasive plant species and treatment options in Alaska.

Control strategies will vary depending on the biology of the particular species. For some species, mechanical control (pulling, mowing, digging, etc.) in the early stages of infestation can be an effective option for eradication. For other species, mechanical control efforts could exacerbate the problem, particularly for plants with vegetative growth strategies. Additionally, control options may vary depending on the timing at which an infestation is discovered. The links below outline these and other factors to consider when deciding the appropriate strategy.

Tool 5.1. List of Invasive Plants and Associated IPM Strategies

Table 5.1. A list of invasive species with an invasiveness rank >69, and links to factsheets and IPM strategies.

| Common Name | Scientific Name | Rank | Growth type | Links to factsheets and IPM strategies |
|--|---|------|-------------|---|
| Bohemian knotweed | <i>Fallopia × bohemica</i> | 87 | Forb | Bohemian Knotweed Factsheet and IPM Strategies, Montana State Field Guide |
| Japanese knotweed | <i>Fallopia japonica</i> | 87 | Forb | Japanese Knotweed, Penn State Vegetation Management Factsheet |
| giant knotweed | <i>Fallopia sachalinensis</i> | 87 | Forb | Giant Knotweed Factsheet and IPM Strategies, Montana State Field Guide |
| spotted knapweed | <i>Centaurea stoebe</i> | 86 | Forb | Spotted Knapweed, Weed Control in Natural Areas in the Western United States |
| Spartina/Cordgrass | <i>Spartina alterniflora</i> , <i>S. angelica</i> , <i>S. densiflora</i> , <i>S. patens</i> | 86 | Grass | Morgan, Vanessa Howard and Sytsma, Mark. Alaska Spartina Prevention, Detection and Response Plan. 2010. Center for Lakes and Reservoirs Publications and Presentations, Team Leafy Spurge Resources, USDA |
| leafy spurge | <i>Euphorbia esula</i> | 84 | Fob | Purple Loosestrife, Natural Resources Conservation Service, Pest Management – Invasive Plant Control |
| purple loosestrife and European wand loosestrife | <i>Lythrum salicaria</i> , <i>L. virgatu</i> | 84 | Forb | Reed Canary Grass (<i>Phalaris arundinacea</i>) Management Guide |
| reed canarygrass | <i>Phalaris arundinacea</i> | 83 | Grass | |

Step 5: Evaluate response options

| Common Name | Scientific Name | Rank | Growth type | Links to factsheets and IPM strategies |
|--------------------------|---------------------------------|------|-------------|--|
| common reed | <i>Phragmites australis</i> | 83 | Grass | USGS Catalog for Phragmites in the Great Lakes |
| ornamental jewelweed | <i>Impatiens glandulifera</i> | 82 | Forb | Impatiens glandulifera factsheet, Invasive Species Compendium |
| giant hogweed | <i>Heracleum mantegazzianum</i> | 81 | Forb | Heracleum mantegazzianum factsheet, Invasive Species Compendium |
| white sweet clover | <i>Melilotus albus</i> | 81 | Forb | White Sweet Clover, University of Alaska, Fairbanks-Cooperative Extension Services |
| American white waterlily | <i>Nymphaea odorata</i> | 80 | Forb | Fragrant waterlily factsheet, Montana State University |
| Himalayan knotweed | <i>Persicaria wallichii</i> | 80 | Forb | Persicaria wallichii factsheet, Invasive Species Compendium |
| orange hawkweed | <i>Hieracium aurantiacum</i> | 79 | Forb | Orange Hawkweed, University of Alaska, Fairbanks-Cooperative Extension Services |
| meadow hawkweed | <i>Hieracium caespitosum</i> | 79 | Forb | Hieracium caespitosum factsheet, Invasive Species Compendium |
| cheatgrass | <i>Bromus tectorum</i> | 78 | Grass | Bromus tectorum factsheet, Invasive Species Compendium |
| Himalayan blackberry | <i>Rubus armeniacus</i> | 77 | Shrub | Rubus armeniacus, BugwoodWiki, The Nature Conservancy |
| Canada thistle | <i>Cirsium arvense</i> | 76 | Forb | Cirsium arvense, BugwoodWiki, The Nature Conservancy |
| Siberian peashrub | <i>Caragana arborescens</i> | 74 | Shrub/tree | Caragana arborescens, BugwoodWiki, The Nature Conservancy |
| European bird cherry | <i>Prunus padus</i> | 74 | Tree | European Bird Cherry, Alaska Plant Materials Science Center |
| chokecherry | <i>Prunus virginiana</i> | 74 | Tree | Chokecherry factsheet, UAA Alaska Natural Heritage Program |
| English ivy | <i>Hedera helix</i> | 73 | Forb | Hendra helix, BugwoodWiki, The Nature Conservancy |
| field sowthistle | <i>Sonchus arvensis</i> | 73 | Forb | Sonchus arvensis factsheet, Invasive Species Compendium |
| bird vetch | <i>Vicia cracca</i> | 73 | Forb | Bird Vetch, University of Alaska, Fairbanks- Cooperative Extension Services |
| creeping buttercup | <i>Ranunculus repens</i> | 72 | Forb | Ranunculus repens factsheet, BugwoodWiki, The Nature Conservancy |
| rugosa rose | <i>Rosa rugosa</i> | 72 | Shrub | Rosa rugosa factsheet, Invasive Species Compendium |
| broadleaved pepperweed | <i>Lepidium latifolium</i> | 71 | Forb | Lepidium latifolium datasheet, Invasive Species Compendium |

Step 5: Evaluate response options

| Common Name | Scientific Name | Rank | Growth type | Links to factsheets and IPM strategies |
|---------------------|--------------------------------|------|-------------|--|
| bigleaf lupine | <i>Lupinus polyphyllus</i> | 71 | Forb | Lupinus polyphyllus datasheet, Invasive Species Compendium |
| garlic mustard | <i>Alliaria petiolata</i> | 70 | Forb | Alliaria petiolata datasheet, Invasive Species Compendium |
| slender false brome | <i>Brachypodium sylvaticum</i> | 70 | Grass | Brachypodium sylvaticum datasheet, Invasive Species Compendium |

Tool 5.2. Response Options Decision Template

1. Examine all feasible response options:

Based on the information gathered in the site specific assessment, list all feasible response actions:

Examples of potential actions to consider include, but are not limited to: chemical controls, mechanical controls, containment, and outreach to user groups including targeted signage.

2. Decision making: comparing options

Compare all feasible options.

| Criteria | Response Option 1 | Response Option 2 | Response Option 3 |
|--|--|--|--|
| What resources would be needed to implement this strategy? | <input type="checkbox"/> Personnel <input type="checkbox"/> IPM tools <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation <input type="checkbox"/> Funding <input type="checkbox"/> Regulatory (boat launch closure, etc.) <input type="checkbox"/> Permitting <input type="checkbox"/> Other | <input type="checkbox"/> Personnel <input type="checkbox"/> IPM tools <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation <input type="checkbox"/> Funding <input type="checkbox"/> Regulatory (boat launch closure, etc.) <input type="checkbox"/> Permitting <input type="checkbox"/> Other | <input type="checkbox"/> Personnel <input type="checkbox"/> IPM tools <input type="checkbox"/> Pesticides and applicators <input type="checkbox"/> Transportation <input type="checkbox"/> Funding <input type="checkbox"/> Regulatory (boat launch closure, etc.) <input type="checkbox"/> Permitting <input type="checkbox"/> Other |
| Of the needed resources, which are readily available? | | | |

Step 5: Evaluate response options

| | | | |
|--|--|--|--|
| What is the cost estimate for this response option? | | | |
| List any regulations or permitting restrictions apply to this action? | | | |
| On a scale of 1-10, with 10 being most feasible, how feasible is it to meet your response objectives using this response option? | | | |
| What precedents exist for using this eradication/control methodology? | | | |

Step 5: Evaluate response options

Tool 5.3. Special Considerations for Designated Wilderness Areas

The Wilderness Act of 1964 established the National Wilderness Preservation System (Wilderness, hereafter), which today has grown to more than 104 million acres, approximately half of which (~57 million acres) are located in Alaska. The Service manages 21 designated Wilderness areas totaling approximately 18.6 million acres on 10 Refuges units in Alaska.

Table 5.3. Wilderness areas managed by the Service in the Alaska Region.

| WILDERNESS AREA | SIZE (ACRES) | REFUGE UNIT |
|-------------------------|---------------------|---------------------|
| Aleutian Islands (1980) | 1,300,000.00 | Alaska Maritime NWR |
| Bering Sea (1970) | 81,340.00 | Alaska Maritime NWR |
| Bogoslof (1970) | 175.00 | Alaska Maritime NWR |
| Chamisso (1975) | 455.00 | Alaska Maritime NWR |
| Forrester Island (1970) | 2,832.00 | Alaska Maritime NWR |
| Hazy Islands (1970) | 32.00 | Alaska Maritime NWR |
| Semidi (1980) | 250,000.00 | Alaska Maritime NWR |
| Simeonof (1976) | 25,855.00 | Alaska Maritime NWR |
| St. Lazaria (1970) | 65.00 | Alaska Maritime NWR |
| Tuxedni (1970) | 5,566.00 | Alaska Maritime NWR |
| Unimak (1980) | 910,000.00 | Alaska Maritime NWR |
| Mollie Beattie (1980) | 8,000,000.00 | Arctic NWR |
| Becharof (1980) | 400,000.00 | Becharof NWR |
| Innoko (1980) | 1,240,000.00 | Innoko NWR |
| Izembek (1980) | 307,981.76 | Izembek NWR |
| Kenai (1980) | 1,354,247.00 | Kenai NWR |
| Koyukuk (1980) | 400,000.00 | Koyukuk NWR |
| Selawik (1980) | 240,000.00 | Selawik NWR |
| Togiak (1980) | 2,270,799.00 | Togiak NWR |
| Andreafsky (1980) | 1,300,000.00 | Yukon Delta NWR |
| Nunivak (1980) | 600,000.00 | Yukon Delta NWR |

Step 5: Evaluate response options

[The Service has developed guidelines for addressing invasive species in Wilderness areas.](#)

Section 2.19 of the guidelines states the following:

“May the Service control invasive species, pests, and diseases in Wilderness?

The Service will follow an IPM approach to prevent, control, or eradicate invasive species, pests, and diseases subject to the criteria in section 2.16 (also see the Refuge program’s biological integrity policy at 601 FW 3.16 for detail about managing non-native species to maintain and restore biological integrity, diversity, and environmental health). The Service will determine appropriate IPM procedures through a Minimum Requirements Analysis (MRA) and document them in the Refuge’s Wilderness Stewardship Plan (WSP). If the approved IPM plan determines that chemical or biological treatments are necessary, we will only use agents that have the least impact on nontarget species and on the wilderness environment in compliance with current Service policy. We may make an exception to introducing species (see section 2.17) for Service-approved, nonnative biological control agents.”

- Pre-planning efforts should have already been undertaken to facilitate the development of the MRA. In Alaska, all actions taken in Wilderness require an MRA. A short-form MRA has been developed for use only in Alaska. Contact the Service Alaska Wilderness Coordinator for this form: **Roger Kaye, roger_kaye@fws.gov**. Further instructions are available in [Appendix A](#).
- If the short-form MRA is not appropriate, particularly if managers are considering a use prohibited by Section 4(c) of the Wilderness Act of 1964, use the Arthur Carhart National Wilderness Training Center’s [Minimum Requirements Decision Guide](#) (Carhart standard form) [to complete the MRA](#). This guide can help to identify if actions are warranted in Wilderness. Things to consider include whether or not options outside of Wilderness can be taken to address a situation, and if actions are necessary by meeting the following criteria:
 - 1) Is action necessary to satisfy valid existing rights or a special provision in Wilderness legislation?
 - 2) Is action necessary to meet the requirements of other federal laws?
 - 3) Is action necessary to preserve one or more of the qualities of wilderness character: Untrammeled, Undeveloped, Natural, Solitude or Primitive and Unconfined Recreation, or Other Features of Value that reflect the character of this area?
- An example Minimum Requirements Analysis case study for [non-native invasive plants can be found here, with additional detail](#). [This Alaska Supplement provides assistance](#) in adapting the use of the Minimum Requirements Decision Guide to Alaska’s Wilderness units with respect to the Wilderness Act of 1964 and the Alaska National Interest Lands Conservation Act.

Step 6: Develop and implement response plan

□ **STEP 6: DEVELOP AND IMPLEMENT INCIDENT RESPONSE FRAMEWORK**

This step provides the framework to develop an incident response plan, which is a systematic process to direct and enact response actions while ensuring all involved entities work together and all regulatory permitting needs are met. The incident response will likely involve partnerships with non-Service agencies and organizations that will play a role in implementing actions.

Step 6 Strategic Tasks

- 1) Draw from existing resources to inform further actions.
 - a) The Kodiak and Kenai National Wildlife Refuges have successfully completed Environmental Assessments for the treatment of invasive plants on Refuge lands and vicinity.
 - b) The National Park Service and the ADNR Division of Agriculture Plant Materials Center have each developed strategic plans for Invasive Plant Management in Alaska.
 - c) Drawing from these established plans to direct response actions can increase efficiency and efficacy. Several of these plans are compiled in [Tool 6.1](#).
- 2) Define clear management goals and objectives that meet SMART ([Specific, Measurable, Attainable, Relevant, Time-bound](#)) criteria.
 - a) The goal of rapid response efforts should be eradication of newly identified infestations. In some cases this may not be feasible and alternative goals and objectives may be pursued.
 - b) At this step it is critical that all members of the response team are aware of and are in agreement with the management goal(s) for the rapid response plan. While it may be challenging to reach consensus in some situations, it is necessary prior to taking actions.
 - c) In the event that multiple infestations are present, the [Invasive Plant Inventory and Early Detection Prioritization Tool](#) can facilitate prioritization of actions.
- 3) Review existing environmental documents and acquire regulatory permits (see [Tool 6.2-Tool 6.5](#)).
 - a) Consistent with Service's IPM policy 569 FW1, part 14.F, Service-supported IPM actions involving herbicide use need to be adequately addressed via successfully concluded National Environmental Policy Act (NEPA) processes prior to undertaking field action involving IPM with herbicide. Details regarding the NEPA process are provided in [Tool 6.4](#).
 - b) Work with designated Service staff to complete [USFWS Pesticide Use Proposal](#) if needed. The Regional IPM coordinator can provide insight into the Service's Pesticide Use Proposal process if needed (when the Service funds or applies pesticides, whether on or off Service lands) ([Tool 6.3](#)).
 - c) If working on areas outside of Service lands, or if projects will be led by non-federal entities, pesticide use permits from the ADEC will also be needed [Tool 6.3](#). Permits are also required from the ADOT if applying pesticides in Right-Of-Ways. The DOT permitting process can take several months to complete, and requirements can vary by location. Work closely with staff from you local SWCDs and CWMAs, as they often have knowledge of the DOT permitting process and may be able to facilitate.

Step 6: Develop and implement response plan

- 4) Use the framework provided in [Tool 6.6](#) to develop a response plan. This will include defining a timeline for response, identifying the best qualified individuals to complete each on-the-ground response action, as well as identifying/confirming available resources, among other considerations.

Step6 Roles and Responsibilities

- NEPA documents should be submitted by the managing office (Refuge or FWCO) for review by the local office and the Regional Invasive Species Program Coordinator and the Regional IPM coordinator. The FWCO or Refuge project leader can sign any decision documents.

Step 6 Tools

Tool 6.1. Existing Documents to Direct Plant Eradication Projects

Contact the Regional Invasive Species Program Coordinator, Sub-Regional EDRR Project Leaders, or the Refuge to receive copies of the following Environmental Assessments:

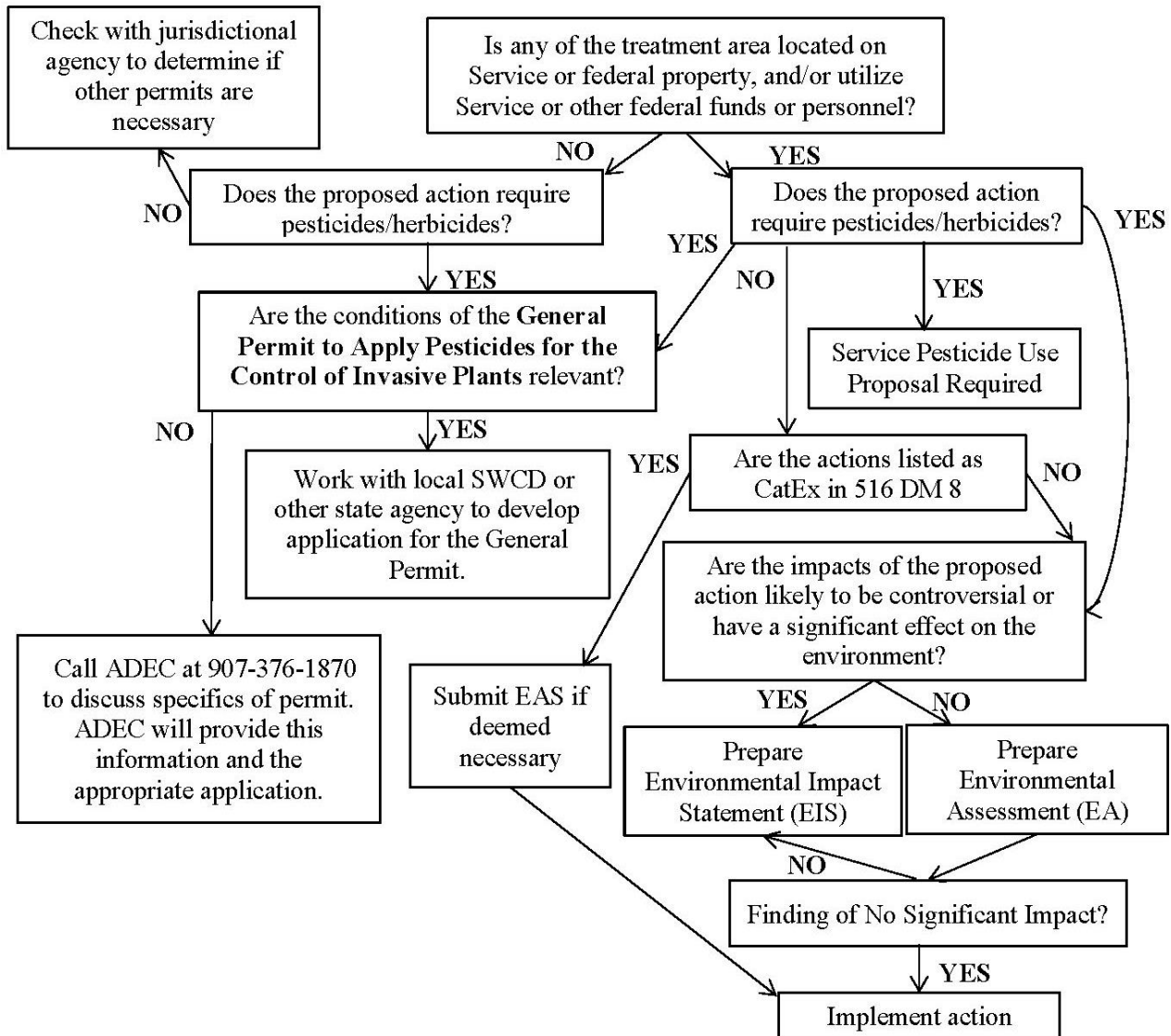
- Integrated Pest Management of Terrestrial Invasive Plants within the Kenai Borough of Southcentral Alaska, Environmental Assessment (2017).
- Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity, Environmental Assessment (2010).

Further information can be found at:

- [Department of Natural Resources Division of Agriculture Plant Materials Center. \(2011\). Strategic Plan for Invasive Weed & Agricultural Pest Management and Prevention in Alaska.](#)
- [National Park Service. \(2009\). Revised Alaska Region Invasive Plant Management Plan.](#)
- [Reed Canary Grass Strategic Watershed Analysis](#)

Step 6: Develop and implement response plan

Tool 6.2. Regulatory Permitting Flowchart



Step 6: Develop and implement response plan

Tool 6.3. Pesticide Use Permits and Proposals

If the response actions will include the use of pesticides (herbicides), permits must be obtained from the appropriate state and federal agencies. Also note that any individuals physically carrying out the application of pesticides must have undergone the ADEC Certified Pesticide Applicator Training and have the appropriate endorsement (see [Tool 1.3](#)).

Service Pesticide Use Proposal

If pesticides are used on Service property, purchased with Service funds, or applied by Service personnel, a Service Pesticide Use Proposal (PUP) must be completed by a Service member through the online portal system. Within the portal, users can select to create a new PUP or modify or duplicate an existing PUP. A Service PUP requires documentation of the IPM strategy used and may require an Endangered Species Act (ESA) consultation ([Tool 6.5](#)) if ESA listed species or critical habitat are within the action area. [See this link for additional information and instructions for completing the Service Pesticide Use Proposal](#), or contact the Service Regional Integrated Pest Management Coordinator:

| Role | Name | Contact Information |
|---|-------------|---------------------------------------|
| Service Regional Integrated Pest Management Coordinator | Angela Matz | angela_matz@fws.gov (907) 786-3483 |

ADEC Pesticide Use Permit

An ADEC pesticide use permit is not required for Service personnel to treat infestations on federal lands. However, if a Conservation District will be leading a response, and/or the response will include use of herbicides off of federal lands, an ADEC Pesticide Use Permit is required.

As of March 2, 2020, the ADEC has issued a [General Permit to Apply Pesticides for Invasive Plants](#), which allows for the application of one or more of the following pesticides:

| Product Name | EPA # | Formulation | Active Ingredient |
|---|-----------|----------------------------|--|
| AquaMaster/Roundup Custom for Aquatic and Terrestrial Use | 524-343 | Soluble concentrate | glyphosate |
| Milestone | 62719-519 | Emulsifiable concentrate | aminopyralid |
| Purestand Selective Herbicide | 71368-38 | Water dispersible granules | metsulfuron methyl |
| Shredder 2,4-D LV6 | 1381-250 | Emulsifiable concentrate | 2,4-D |
| Shredder MCPE | 1381-98 | Emulsifiable concentrate | 2-Ethylhexyl 2-methyl-4-chlorophenoxyacetate |
| Telar XP | 352-654 | Water dispersible granules | chlorsulfuron |

This permit allows application of pesticides only if all of the following conditions are true:

1. Project is intended to control invasive weeds with a rank of 30 or higher on the AKEPIC website; <http://accs.uaa.alaska.edu/invasive-species/non-native-plant-species-list>
2. Project is overseen or managed by a state agency, which includes Alaska’s Soil and Water Conservation Districts.

Step 6: Develop and implement response plan

3. Pesticides will be applied only to dry land that is a minimum of 20 feet from the edge of any surface water except for wiper applications (including application to cut stump, frilled, or basal bark areas of vegetation), which may be done up to water's edge.
4. Pesticides will be applied only by ground equipment.
5. Treatment sites have not been identified as habitat for a threatened or endangered species referenced in 50 CFR 17.11-17.12
6. Pesticide application will not be made within 200 feet of any public drinking water system (Defined as a drinking water system with 15 or more service connections or serving an average of at least 25 individuals daily at least 60 days out of the year. For surface water systems, this includes the portion of the watershed which could impact the water source, and is identified on the Drinking Water Program website mapping system: <http://www.arcgis.com/home/webmap/viewer.html?webmap=13ed2116e4094f9994775af9a62a1e85>.)
7. Applicant has obtained written landowner permission prior to any application, including date and signature.

Further detail, links to the application and information regarding the public notice requirements, can be found on the ADEC General Permit website: <https://dec.alaska.gov/eh/pest/general-permits-for-pesticide-application/>. Contact ADEC to discuss options for obtaining a Pesticide Use Permit:

| Role | Name | Contact Information |
|---------------------------|-------------------|--|
| Pesticide Program Manager | Karin Hendrickson | karin.hendrickson@alaska.gov (907) 376-1856 |

Step 6: Develop and implement response plan

Tool 6.4. National Environmental Policy Act (NEPA) Compliance

NEPA applies when a federal action would result in an effect on the environment or to human health, even when the effect would be beneficial, or when a federal agency responds to an outside request for a permit or license. Review existing documents to determine if the proposed actions fall under an existing NEPA analysis. Final versions of existing NEPA documents can be acquired from the Regional Invasive Species Coordinator.

If proposed actions do not fall under an existing NEPA analysis, a new analysis will need to be completed. The level of environmental analysis required to comply with the NEPA will differ depending on the action proposed and the anticipated impacts. Additional detail regarding the NEPA (specific to Refuges) [can be found here](#). The Service Draft NEPA Reference Handbook [can be found here](#).

There are three different levels of NEPA analysis, these include:

- **Categorical Exclusion (CatEx).** If the proposed action is covered by one of the listed categorical exclusions and no extraordinary circumstances apply, no further analysis under the NEPA is required. The Department of the Interior (Department) and the Service have established a list of categorical exclusions that may cover the proposed action. The Department publishes the list of actions that are categorically excluded in 43 CFR 46.205 and 46.210. The Service’s CatEx list is in 516 DM 8. It is not necessary to document that an action qualifies as a CatEx before implementing the action, but in certain circumstances it may be prudent to do so. [Department Categorical Exclusions can be found here](#).
 - For an action where there may be some question about whether it qualifies as a CatEx, it is recommended that you create a record that shows how the action qualifies as a CatEx—called an Environmental Action Statement (EAS). An EAS format can be found in: [550 FW 3](#)
 - If working in cooperation with an agency that has a Categorical Exclusion for the proposed action, then the categorical exclusion may apply to the Service action, according to [516 DM 8](#), Section 8.5 (C) (8):
 - “Actions where the Service has concurrence or coapproval with another agency and the action is a categorical exclusion for that agency. This would normally involve one Federal action or connected actions where the Service is a cooperating agency.”
- **Environmental Assessment (EA).** If the proposed action is not covered by a CatEx, and the impacts of the proposed action are not likely to be controversial or to have a significant effect on the environment, then you should prepare an EA. If during preparation of the EA you find no significant impacts or impacts can be mitigated below a level of significance through mitigation commitments, then the NEPA review process ends with preparation of a Finding of No Significant Impact (FONSI), and you can implement the action. However, if analyses in an EA indicate that there will be significant or controversial impacts, then you must prepare an Environmental Impact Statement (EIS). If significant or controversial impacts from the proposed action are anticipated, doing an EIS from the beginning (and skipping the EA) may save time and resources.

Step 6: Develop and implement response plan

- **Environmental Impact Statement (EIS).** If the action will have a significant impact on the environment or will be controversial, an EIS is required. Once you complete the EIS, you must develop and issue a Record of Decision that describes the alternative selected for implementation.

Tool 6.5. Endangered Species Act (ESA) Section 7 Consultation

The Endangered Species Act (ESA) directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, called "Interagency Cooperation," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Information from:

<https://www.fws.gov/endangered/laws-policies/section-7.html> and;
<https://www.fws.gov/midwest/endangered/section7/s7process/7a2process.html>

Informal Consultation

Under Section 7, federal agencies (including the Service) must consult with the Service when any action the agency carries out, funds, or authorizes (such as through a permit) *may affect* a listed endangered or threatened species. This process usually begins as informal consultation. A federal agency, in the early stages of project planning, approaches the Service and requests informal consultation. Discussions between the two agencies may include what types of listed species may occur in the proposed action area, and what effect the proposed action may have on those species.

If the federal agency, after discussions with the Service, determines that the proposed action is not likely to affect any listed species in the project area, and if the Service concurs, the informal consultation is complete and the proposed project moves ahead. If it appears that the agency's action may affect a listed species, that agency may then prepare a biological assessment to assist in its determination of the project's effect on a species.

Formal Consultation and the Biological Opinion

When a federal agency determines, through a biological assessment or other review, that its action is *likely to adversely affect* a listed species, the agency submits to the Service a request for formal consultation. During formal consultation, the Service and the agency share information about the proposed project and the species likely to be affected. Formal consultation may last up to 90 days, after which the Service will prepare a biological opinion on whether the proposed activity will *jeopardize* the continued existence of a listed species. The Service has 45 days after completion of formal consultation to write the opinion.

In making a determination on whether an action will result in jeopardy, the Service begins by looking at the current status of the species, or "baseline." Added to the baseline are the various effects – direct, indirect, interrelated, and interdependent – of the proposed federal action. The Service also examines the cumulative effects of other non-federal actions that may occur in the action area, including state, Alaska Native, local, or private activities that are reasonably certain to occur in the project area. [Further information about the ESA Section 7 consultation can be found at this link.](#) Or contact the Service Endangered Species Coordinator for the Alaska Region for additional help or direction regarding Section 7 consultation.

Step 6: Develop and implement response plan

| Role | Name | Contact Information |
|--|------------|--------------------------------------|
| Regional Endangered Species Program Coordinator | Drew Crane | drew_crane@fws.gov (907) 786-3323 |

Tool 6.6. Incident Response Plan Framework

List objectives (described in Step 6, Strategic Task 2) for the response to this infestation. Objectives should be specific, measurable, achievable, realistic and time-bound. The primary objective of rapid response actions should be eradication whenever possible. However, eradication may not be feasible. In such cases, alternative objectives could include immediate actions taken to prevent further spread, contain infestation in known areas of infestation, or protection human health or safety. Ongoing management of long-term infestations is not a rapid response action, however, and should not be listed.

Location of sighting

Nearest town/city/village:

GPS Coordinates (NAD 83) building/locations of sighting(s), etc:

Extent of problem:

What is the approximate size of the impacted area?

Is the potential infestation in an inhabited or uninhabited area?

Are there impediments to accessing the site?

Is this an established population? (If so, eradication of such an issue may not constitute rapid response actions).

Current Actions

Are there any response actions currently taking place at the infestation site? (e.g., treatment for other invasive species, containment, control activities).

Planned actions

What response action was chosen for this infestation?

What resources are needed for the response?

What resources are readily available?

For resources not readily available, how can they be obtained?

What actions are needed to limit non-target impacts?

Permitting and regulations (select those that apply)

- ADEC PUP required
- Service PUP required

Step 6: Develop and implement response plan

- CatEx/EAS
- EA/FONSI
- EIS
- ESA Section 7 Consultation
- Minimum Requirements Analysis (for infestations in a Wilderness)
- Other:

Personnel

Who will be the responsible lead(s) in charge of overseeing the entire response plan (the Response Plan Implementation Coordinator identified in [Step 3](#))?

| Name | Agency | Contact Info | Role |
|------|--------|--------------|------|
| 1) | | | |
| 2) | | | |

Who will be responsible for acquiring the needed resources?

| Name | Agency | Contact Info | Role |
|------|--------|--------------|------|
| 1) | | | |
| 2) | | | |

Who will be responsible for overseeing outreach and communication to shareholders, partners and the public (Communication Coordinators identified in [Step 3](#))?

| Name | Agency | Contact Info | Role |
|------|--------|--------------|------|
| 1) | | | |
| 2) | | | |

Who will be responsible for obtaining any necessary permits?

| Name | Agency | Contact Info | Role |
|------|--------|--------------|------|
| 1) | | | |
| 2) | | | |

List other individuals directly involved in the response and their roles:

| Name | Agency | Contact Info | Role |
|------|--------|--------------|------|
| 1) | | | |
| 2) | | | |

Step 6: Develop and implement response plan

Funding

What is the estimated level of funding needed to implement this rapid response?

What funding sources can be used to support this response effort?

Who will be responsible for securing funding for this response effort?

Timeline

When will permits be applied for?

When are permits anticipated to be obtained?

Goal date for implementing action(s)?

Step 7: Effectiveness monitoring

□ **STEP 7: EFFECTIVENESS MONITORING**

After the response actions have been taken, continued monitoring of the affected and surrounding areas will be necessary to determine efficacy of the response and observe any non-target effects. This step helps direct these actions.

Step 7 Strategic Tasks

- 1) Assign leadership to oversight and direction of long-term monitoring efforts.
 - a. The Response Plan Implementation Coordinator may or may not be the individual in charge of long-term monitoring efforts.
 - b. Identifying new individual(s) to direct long-term monitoring may be necessary (see [Tool 7.1](#)).
- 2) Establish a long-term monitoring protocol for areas that have undergone response actions.
 - a. This information may be outlined in a larger Integrated Pest Management Plan if one is developed or already exists for the affected area. This plan should include monitoring of efficacy, as well as estimates of non-target effects of treatment.
 - b. Monitoring efforts should include focus on areas that have undergone response actions, but may also include early detection efforts in surrounding areas to verify if the infestation has spread to adjacent locations.
- 3) Develop a communication plan for long-term monitoring efforts. This should include guidance for who will inform the public, partners, and other stakeholders of ongoing efforts and outcomes.

Step 7 Roles and Responsibilities

- The leadership in charge of long term monitoring efforts should also establish a plan for continued communication with partners and the Service Regional Office.
- Ongoing communication to keep the public apprised of ongoing efforts and outcomes will likely be necessary. A public communication coordinator may continue to be assigned to this task.

Step 7 Tools

Tool 7.1. Post-Treatment Monitoring

Ongoing monitoring efforts should use the best available, scientifically rigorous techniques to assess plant presence and abundance following treatment. Also monitor non-plant species that may be impacted by the invasive plant or by management actions. The duration of the post-treatment monitoring will depend on the invasive species and the site characteristics. For example, Canada thistle seeds can remain viable for up to 20 years, and ongoing monitoring (and re-treatment) may be required for 15 years or longer to ensure successful eradication (Kodiak NWR Canada Thistle Integrated Pest Management Plan, 2007). Monitoring efforts focused on characterizing non-target effects may operate on different timelines than monitoring efforts focused on characterizing efficacy of treatment and detecting re-invasions. However, both pieces are critical and should be included when developing post-treatment monitoring plans.

Integrated pest management plans for Orange hawkweed, Oxeye daisy, and Canada thistle have been developed by the Kodiak National Wildlife Refuge and include information about post-treatment monitoring. A wide variety of Integrated Pest Management Plans developed by Refuges throughout the US for terrestrial plant species are also available for

Step 7: Effectiveness monitoring

Service personnel through [ServCat](#). These plans include a range of guidance for post-treatment monitoring. Drawing from these plans as a baseline can help to develop future efforts. Contact the Regional Invasive Species Program Coordinator or the Sub-Regional EDRR Project Managers for copies of such IPM plans.

References

REFERENCES

- Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers (3rd ed.). Cal-IPC Publication 2012-03. California Invasive Plant Council, Berkeley, CA. Available at www.cal-ipc.org.
- Carlson, M.L., Lapina I.V., Shepard, M., Conn, J.S., Densmore, R., Spencer, P., Heys, J., Riley, J., and J. Nielsen. 2008. Invasiveness ranking system for non-native plants of Alaska. United States Department of Agriculture and Forest Service Alaska Region.
- Carlson, M.L. and M. Shepard. 2007. The spread of invasive exotic plants in Alaska: Is establishment of exotics accelerating? Harrington, T.B. and S.H. Reichard (tech. eds.). Meeting the Challenge: Invasive Plants in Pacific Northwestern Ecosystems. USDA Forest Service, Pacific Northwest Research Station, Gen. Tech. Rep. PNW-GTR-694.
- Cox, G.W. 1999. Alien species in North America and Hawaii: Impacts on natural ecosystems. Island Press.
- Cronk, Q. and J. Fuller. 1995. Plant invaders: the threat to natural systems. Chapman Hall, New York.
- Alaska Department of Natural Resources Division (ADNR). 2011. Strategic Plan for Invasive Weed & Agricultural Pest Management and Prevention in Alaska. Division of Agriculture Plant Materials Science Center.
- Flagstad, L., Cortes-Burns, H., and Greenstein, C. 2019. Identification of Non-native Plants in Alaska. Alaska Natural Heritage Program, University of Alaska Anchorage. 219 pp.
- Mulder, C.P.H., and Spellman, K.V. 2019. Do longer growing seasons give introduced plants an advantage over native plants in Interior Alaska? *Botany*, 97:347-362, <https://doi.org/10.1139/cjb-2018-0209>
- National Park Service. 2009. Revised Alaska Region Invasive Plant Management Plan.
- Rew and Pokorny. 2006. Inventory and survey methods for nonindigenous plant species. Montana State University Extension, First Edition.
- United States Fish and Wildlife Services (USFWS). 2010. Integrated Pest Management of Invasive Plants on Kodiak National Wildlife Refuge and Vicinity.
- Walker, L.R. and S.D. Smith. 1997. Impacts of invasive plants on community and ecosystem properties. In J.O. Luken and J.W. Thieret (eds.). *Assessment and Management of Plant Invasions*. Springer, New York.

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**APPENDIX A: Service Alaska Region Minimum Requirements Analysis Short Form
Instructions and Tips**

When is it appropriate to use the short form as opposed to the standard Carhart form?

The standard form (see link below for the Carhart form) is appropriate for all projects. It is necessary for consideration of all projects proposing use of any Wilderness Act Section 4c prohibited use. However, it may be most efficient to reserve the Carhart form for more complicated projects (those having many project components, greater impacts, complexity, or controversy). The short form is appropriate for projects that are simple, have fewer impacts, fewer project components, and are less controversial. Examples of appropriate use of the short form include the following: water sampling on lakes with access by floatplane; law enforcement patrols by airplane that do not disturb sensitive resources; routine maintenance of a historic cabin using hand tools with access by motorboat; and archeological survey with small test pits conducted by foot.

If you are having trouble answering any of the questions on the short form, it is a good indication that the standard form is a better fit for that project. It is not appropriate to use the short form on projects that, for example, propose use of a helicopter, large field camps of long duration, lethal sampling, release of chemical tracers, or a survey of visitors within the Wilderness. In these instances the standard form is more appropriate because of the space required to evaluate a broader range of alternatives and impacts, and to do so in a more thorough and complete way.

Usually a project proposal exists independently of the MRA form. If so, attach that description with the MRA.

If a more in-depth MRA is warranted, use the Arthur Carhart National Wilderness Training Center's Minimum Requirements Decision Guide (Carhart standard form), found here: <http://www.wilderness.net/MRA>

Is the project necessary to meet the specific requirements of any law?

Identify any valid existing rights, special provision in the Wilderness Act, or requirement of other law that requires the action. Cite the law and section as applicable. Describe whether the law says that a specific action "shall" be taken or that an action "may" be taken. This is an important distinction, if the law says "may" then the action is discretionary and it needs to be evaluated whether it is actually necessary for the administration of the area as wilderness. In asking if the project is "necessary" to meet the requirements of another law, then it must happen to comply with the law. If we didn't take the action, we would be violating the law.

Apparent conflicts between the Wilderness Act and other legislation may require innovative approaches and not all apparent conflicts are genuine. No law over-rides another law (unless specifically stated in the superseding law). The requirements of all applicable laws must be met.

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Federal laws that do not directly address wilderness may influence the need for actions in wilderness. In some instances, the administrator is asked to satisfy the requirements of multiple laws. Likely examples in Alaska include:

Alaska National Interest Lands Conservation Act of 1980 (ANILCA), 16 U.S.C. 3150.
Management of a site listed on the National Register of Historic Places (National Historic Preservation Act).
Alaska Mineral Resource Assessment Program (AMRAP) authorized by section 1010 of ANILCA.

Does the project propose a Wilderness Act Section 4c prohibited activity, other than use of motorboats, aircraft, and snow machines for access, as provided for in ANILCA Section 1110?

If so, use the standard MRA form. Note that ANILCA allows these exceptions for access, not, for example, the use of motorboats for fishing, or snow machines for hi boarding.

Can the project be accomplished with only minimal impacts to wilderness character, wilderness resources, and wilderness values? Minimal impacts includes impacts that are no greater than an average recreational trip would have in the same vicinity, time of year, etc.

Describe potential impacts of the action, as proposed, to each quality of wilderness character. These qualities are described below:

- **Untrammeled Quality** – In wilderness, “the earth and its community of life” are essentially unhindered and free from modern human control or manipulation, ”in contrast with those areas where man and his own works dominate the landscape.” This quality is important because it helps insure that wilderness is managed with the utmost humility and restraint, respecting the autonomy of nature that allows a place to be wild and free. However, it is unlikely that action is necessary to preserve this quality, unless the decision is to stop taking action. In fact, to preserve this quality it may be necessary to cease actions that manipulate “the earth and its community of life” that are not needed to preserve some other quality of wilderness character.
- **Natural Quality** – A wilderness area is to be “protected and managed so as to preserve its natural conditions.” Wilderness ecological systems are substantially free from the effects of modern civilization. Preserving this quality ensures that indigenous species, patterns and ecological processes are protected and allows us to understand and learn from natural features. To preserve this quality, it may be necessary to take action to correct unnatural conditions even if they were present at the time of designation.
- **Undeveloped Quality** – Wilderness retains its “primeval character and influence,” and is essentially “without permanent improvements” or modern human occupation. Preserving this quality keeps areas free from “expanding settlement and growing mechanization” and “with the imprint of man’s work substantially unnoticeable” as required by the Wilderness Act. To preserve this quality, it may be necessary to remove existing

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structures or installations which are unnecessary for the administration of the area as wilderness or otherwise are not features of the area's wilderness character.

- **Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation Quality** – The Wilderness Act defines wilderness as having “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is about the opportunity for people to experience wilderness. The opportunities provided by wilderness include the chance to experience primitive recreation, natural sights and sounds, solitude, freedom, risk, the physical and mental challenges of self-discovery and self-reliance, and to use traditional skills free from the constraints of modern culture. Look at each sub-part of this quality (solitude, primitive recreation, unconfined recreation) to determine if there is a need for action. To preserve this quality, it may be necessary to take action to improve solitude, primitive recreation, or unconfined recreation beyond the conditions present at the time of designation.
- **Other Features of Value Quality** – The Wilderness Act states that areas “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value”. Some of these features, such as the presence of threatened and endangered species, are also part of the Natural quality of a wilderness and could be evaluated for effects to that quality unless the specific species or habitat is unique to the wilderness area. Other features, however, such as the presence of important geological formations, cultural resources, historical sites, or paleontological localities, do not fit easily into one of the other four qualities. While many different types of features could be included, the intent is to include those that are significant or integral to the wilderness. Features mentioned in wilderness enabling legislation or legislative history would likely qualify.

Step 2: Determine the minimum activity

A. Where feasible, describe at least two alternative methods to accomplish project objectives.

Describe the relative impacts of all alternatives to the applicable wilderness character qualities.

Dropped alternatives should be briefly mentioned. Valid reasons for deciding that an alternative is unacceptable or not feasible should be limited to: 1) actions that are impossible to accomplish by any means, 2) actions that are possible to accomplish but implementation would cause unacceptably greater negative impacts to wilderness character or, 3) actions that would cause an unacceptable safety risk to workers or the public which cannot be mitigated. Alternatives should not be eliminated from full consideration simply because implementation would take more time or money, or because the skills or equipment needed are not readily available on the local unit.

B. Select a preferred alternative.

Briefly describe the benefits or adverse effects to the qualities of wilderness character and other legal requirements.

If any of the qualities of wilderness character are degraded in the selected alternative, you must explain how that degradation is justified by preserving wilderness character as a whole.

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If you are selecting an alternative that does not have the least negative impact to wilderness character, explain why. The most common examples of this are due to safety reasons. If the least impact to wilderness character is found to be the same in two or more alternatives, you may base your decision on the other criteria (perpetuation of traditional skills, economics, and safety). Explain your reasoning.

The rationale should demonstrate that the determination is clearly a result of objective evaluation of the alternatives and not the result of an inappropriate bias or justification of an alternative or method for non-wilderness reasons. If your selection is based at least in part on the safety criterion, be sure to explain the rationale and include or reference supporting analysis or documentation.

Avoid selecting an alternative based primarily on cost and time of implementation. While administrative activities should always be accomplished with economic efficiency, both law and agency policy directs us away from considering the cost as the over-riding factors for administrative use of otherwise prohibited activities. The Wilderness Act provides only the following as legal basis for approving use of any of the Section 4(c) prohibited uses for administrative activities:

“...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act...”

After you have completed the MRA Worksheet make sure that any mitigation, monitoring, and reporting requirements are summarized on the first signature page.

Approval of the MRA

Like the standard form MRA, decisions made via the short form must be approved according to the provisions of our Wilderness Stewardship Policy, Section 1.20: “Refuge managers may make minimum requirement decisions only if they have attended the Carhart Center’s national wilderness stewardship course. If refuge managers have not attended this training, they must send the MRA to their refuge supervisor for approval. If the supervisor lacks the required training, the supervisor must request review and approval from an individual who has had this training and is equal to or higher than the refuge manager in the organizational hierarchy.”