




KENAI PENINSULA COOPERATIVE
**INVASIVE SPECIES
MANAGEMENT AREA**

Integrated Pest Management Plan for

Kenai Peninsula/Prince William Sound State Parks Managed Lands

Alaska Department of Natural Resources, Division of Parks & Outdoor Recreation

IPM Plan Effective Dates:	May 3, 2024 to May 3, 2026
Management Area Name/Location:	Kenai/Prince William Sound Area State Parks (Alaska Department of Natural Resources, Division of Parks & Outdoor Recreation)
General Site Description:	Forests, riparian areas, meadows, trails, trailheads, campgrounds, landscaping, roadsides, parking areas, and utility ROWs
Land Uses:	Outdoor recreation, transportation, and utility ROWs
Name of Person in Charge:	Brent Goodrum, Department of Natural Resources, Director of Lands 
Certified Applicator Name(s):	Abigail DeKoekkoek, Bonnie Bernard, Patrick Houlihan, Casey Greenstein, and new staff
Certification Numbers:	DeKoekkoek (10947-2507-1/4/9); Bernard (10420-2206-9); Greenstein (10771-2505-1/2/4/9); Houlihan (10662-2405-1/2/4/6/9).

1. Action Thresholds

Check the types or categories of pests that might present a problem or need to be controlled at this management site:

<input checked="" type="checkbox"/>	Category
<input checked="" type="checkbox"/>	Vegetation
<input type="checkbox"/>	Insects
<input type="checkbox"/>	Fungus
<input type="checkbox"/>	Rodents
<input type="checkbox"/>	Other (describe below)



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For each pest category listed above, describe the level at which the pest becomes a problem which requires control measures to be taken.

This IPM addresses the control of invasive plants ranked greater than 60 by the Alaska Invasive Plant Ranking system (scale of 1-100), and those species of concern identified in the [KP-CISMA Integrated Weed Management Strategy](#), and non-native species recently introduced by construction/utility projects in remote areas. Several current and potential future species are invading natural areas of Kenai Peninsula State Park managed lands, and if not controlled, will displace native plant communities that provide ecological functions (e.g. habitat, nutrient cycling) for native fish and wildlife, and alter public values (e.g. aesthetics, food production) in Kenai Peninsula State Parks.

The invasive plant species to be treated in 202 include, but are not limited to: Bird Vetch (*Vicia cracca*), White Sweetclover (*Melilotus alba*), Orange Hawkweed (*Hieracium aurantiacum*), Narrowleaf Hawkweed (*Hieracium umbellatum*), Meadow Hawkweed (*Hieracium caespitosum*) Canada/Creeping Thistle (*Cirsium arvense*), Oxeye Daisy (*Leucanthemum vulgare*), Reed Canarygrass (*phalaris arundinacea*), Common Tansy (*Tanacetum vulgare*), and European Bird Cherry (*Prunus padus*).

Additional non-native species may be treated, as requested by Kenai State Parks Managers, should small infestations of newly introduced populations to remote areas be discovered, and eradication is deemed feasible in the short-term.

Action threshold: the presence of a one or more individual plants of each of these species in Kenai Peninsula State Park land is a problem due to their high levels of invasiveness and potential to spread.

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2. Monitor and Identify Pests

How often will the management area be inspected for the presence of pests?

Kenai Peninsula/Prince William Sound Area State Park managed land is extensive and includes Kachemak Bay State Park, Caines Head State Park, the Kenai River Special Management Area, multiple State Recreation Sites, and more. However, most invasive species are known to be or will be found in areas with high public (or utility) use such as roads, trails, trailheads, campgrounds, and utility ROWs.

High use areas will be inspected throughout the growing season for the presence of invasive plants on a regular (monthly or more frequently), but informal basis by State Park Rangers, KP-CISMA members or contractors, and interested members of the public (trail work volunteers).

Readily accessible, known invasive plant populations that are chemically treated will be surveyed two or more times during the growing season to monitor their populations and response to management. Remote areas with known populations will be surveyed on an annual basis.



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Which locations will be inspected?

All known locations of highly and extremely invasive plant species on State Parks land will be inspected each year. New invasive plant reports from park rangers and citizens will be surveyed to confirm species and extent of the infestation as soon as possible.

What methods will be used for identifying and quantifying the presence of pests?

Known and potential new areas of infestation will be inspected visually on foot within State Parks by Rangers, and/or a KP-CISMA staff or contractor who has previously visited the site. Infestations are quantified through visual estimation of number of plants, infestation area, and by mapping the boundary infestations in GIS.

How will pest species be identified?

All species are readily identifiable in the field based on various morphological characteristics viewed with the naked eye to people with adequate training or experience. Identifications will be confirmed by members or contractors from the KP-CISMA or others trained in invasive plant identification using the "Identification of Non-Native Plants in Alaska" guide produced by the UAA Alaska Center for Conservation Science or other identification resources.

Describe record keeping procedures:

Herbicide application records will be written on paper forms using the DEC reporting template (record of each control applied, with date, location, and extent of invasive plants presence), and digitally by iPads or smartphones using the ESRI FieldMaps App, which automatically updates an ArcGIS Online Database. Paper forms are moved from the field to the KP-CISMA partner's office and scanned into a computer to prevent loss of records and easier retrieval later.

Homer Soil & Water Conservation District serves as the KP-CISMA Coordinator, and the Kenai Watershed Forum serves as the KP-CISMA Field Coordinator. Both organizations have access to all digital records of surveys and herbicide applications.

Pre and post treatment inspection will include the date, location, and extent of invasive plants present. Post treatment inspections will evaluate the effectiveness of treatment with recommendations for follow up action, and note any non-target impacts to other species.

Information from inspections and applications will be retained for future reference and to help guide future control decisions. A short report on surveys, control efforts, and results will be provided to Kenai/Prince William Sound Area SP management and the KP-CISMA each year.

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3. Prevent Pests

For each pest category listed under Section 1, describe preventative measures that will be taken:

Vegetation:

We will encourage and advise Kenai Peninsula State Park management to take several steps to prevent the introduction of invasive plants. During landscaping and other park improvements, only non-invasive species will be planted and certified weed free gravel should be specified if available (material sources like topsoil will be informally inspected if certified weed-free products are not available). Prior to construction, routine maintenance, and patrolling activities, Kenai Peninsula SP staff and contractors should clean vehicles, equipment, boots, etc. after working in an area known to be infested with invasive plants (such as the Seward highway corridor, Soldotna/Homer area, etc.). Currently, Homer Soil & Water inspects all contractor equipment before it leaves the Homer Spit and crosses Kachemak Bay to State Park land.

Public education and outreach efforts will help prevent the introduction of invasive plants, several boot brush stations have already been installed at SP access points (i.e. Homer and Seward Harbors), and several more are planned for boat launch sites and trailheads. The boot brush stations will provide the recreating public with information about the harmful impacts of invasive plants while providing a boot brush to clean soil and possible seeds off their footwear.

The KP-CISMA and its partners conduct a bi-annual workshop for field technicians and managers working in remote areas. This includes videos and tools for prevention measures, management options, and species identification. Furthermore, the new kenaiinvasives.org website and associated facebook page are active with social media, weed pull events are scheduled throughout the summer, and presentations are given to local stakeholder groups. This outreach includes the message to the public of preventing the spread of invasive species by cleaning potential seeds prior to entering natural areas.

How often will preventative measures be applied?

Preventive measures will be ongoing.

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4. Control Measures

For each pest category listed under Section 1, list potential non-chemical control measures that may be used:



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<p>Cultural Controls</p>	<p>Vegetation:</p> <p>Most invasive plant populations are in natural areas where cultural manipulation of the environment does not normally take place, would not be desirable, nor would be effective on aggressive invasive plants.</p> <p>In park landscaping, no invasive plants will be installed. And all plants, topsoil, and other materials brought in should be inspected for invasive plants. Cleared or bare ground in landscaped areas should be seeded with fast spreading non-invasive species or tarped and covered with wood chips to prevent open soil that would be prime for invasion by invasive plants.</p>
<p>Mechanical Controls:</p>	<p>Hand pulling/digging:</p> <p>Can be somewhat effective on very small populations of certain invasive plants. Hand pulling typically will not eradicate the population but can slow down the spread and buy time until more effective control measures can occur. By species:</p> <ul style="list-style-type: none"> -white sweetclover, bird vetch, European bird cherry, oxeye daisy, yellow hawkweeds – fairly to modestly effective for small populations/ small saplings. - creeping thistle – not pleasant to pull, but somewhat effective on very small populations - common tansy – on small plants may be effective, but root system is deep and will need to be dug up or chemically controlled. <p>Not effective and may be counterproductive for reed canarygrass and orange hawkweed.</p> <p>Mechanical – tarping/cover</p> <p>This method has been tried at great expense but poor results in Kenai/Soldotna area for reed canarygrass, orange hawkweed, and in Anchorage for creeping thistle. The invasive plants tend to escape the tarps and spread beyond. The long seed viability means the tarps need to stay down for several years – and everything underneath dies – complete revegetation is required.</p> <p>Mechanical – mowing/cutting</p> <p>Ineffective or counterproductive for most of these species. Mowing can help slow and contain the spread of bird vetch, but it will not eradicate it and is not a desirable approach when vetch is growing on native plants or landscaping.</p>



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For each pest category listed under Section 1, describe the characteristics needed in any chemical controls that may be used:

Product must be a systemic herbicide to ensure that the entire plant including the roots are controlled. These species are hard to control, and typically only certain herbicides applied at the correct time will work. Residual control is very helpful for species with long seed viabilities and a wide range of germination times.

For each pest category listed under Section 1, list potential chemical controls that may be used:

Target Pest	Product Name	EPA Registration Number
Reed canarygrass	Roundup Custom (glyphosate)	524-343 (Roundup)
bird cherry	Roundup Custom (glyphosate); OR Milestone (aminopyralid)	524-343 (Roundup); 62719-519 (Milestone)
orange/yellow hawkweeds	Milestone	62719-519
white sweetclover	Milestone	62719-519
bird vetch	Milestone	62719-519
common tansy	Milestone	62719-519
creeping thistle	Milestone	62719-519
oxeye daisy	Milestone	62719-519
Additional broad-leafed non-native species	Milestone, (per label requirements/applicability)	62719-519

Describe how treated areas will be re-inspected and evaluated for effectiveness of controls:

Following application of controls (cultural, mechanical, or chemical), KP-CISMA partners and/or contractors will re-inspect each treated area in the current season and following growing seasons to determine if the applied controls achieved the target control level. Reapplication of control methods will likely be necessary to achieve full control.



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KP-CISMA contractors and/or members will evaluate the effectiveness of controls. If control actions did not achieve the target control level, the certified applicator will recommend modifications or additional controls.

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