

Integrated Pest Management Plan for the Susitna Flats State Game Refuge in the Matanuska Susitna Borough, Alaska

IPM Plan Effective Dates:	July 1, 2023 to June 30, 2025
Management Area Name/Location:	Susitna Flats State Game Refuge (SFSGR); Alaska Department of Fish and Game
General Site Description:	Project areas are oil and gas pads, roads, and utility ROWs. Most of the Refuge area is undeveloped natural habitat.
Land Uses:	Wildlife habitat, hunting, fishing, oil & gas production, and utility ROWs.
Name of Person in Charge:	Tim Stallard, Alien Species Control, LLC (Contractor for Hilcorp Alaska, LLC)
Certified Applicator Name(s):	Tim Stallard, Paul Bennetts, plus new future staff.
Certification Numbers:	Stallard (10901-2605-4/6/9); Bennetts (10670-2405-4/9); new staff pending

1. Action Thresholds

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

✓	Category
✓	Vegetation
	Insects
	Fungus
	Rodents
	Other (describe below)

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 “moderately” (rank 60-69), “highly” (rank 70-79), and “extremely” (rank 80+) invasive plants species as defined by the Alaska Invasive Plant Ranking system (scale of 1-100). Several current (and potential future) invasive plant species are known in areas leased for oil and gas development plus associated roads and Rights of Way (ROWs).

These species have the potential to move from distributed areas into natural areas and displace native plant communities that provide ecological functions (e.g. habitat, nutrient cycling) within the State Game Refuge.

The known invasive plant species are: 1) white sweetclover (*Melilotus alba*, rank 81), 2) yellow toadflax (*Linaria vulgaris*, rank 69), and 3) oxeye daisy (*Leucanthemum vulgare*, rank 61). Orange hawkweed (*Hieracium auranticum*, rank 79) is known at numerous locations in the Beluga area, which is connected by road to the project area within the SFSGR.

Action threshold: the presence of a one or more individual plants of each of these species or other highly invasive plants in the SFSGR is a problem due to their high levels of invasiveness and potential to spread to natural habitat areas.

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2. Monitor and Identify Pests

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

The SFSGR is a remote area accessed primarily by small plane (and then vehicle on the road network). Alien Species Control, LLC (ASC) plans to inspect identified invasive plant infestations (at pads, roads, and ROWs) 1 to 3 times per year. Project partner Tyonek Tribal Conservation District (TTCD, who conducts similar work along the Tyonek and Beluga area road network) may be able to help inspect project areas.

Which locations will be inspected?

All known locations of invasive plant species ranked 60 and higher in road accessible areas of SFSGR will be inspected each year. The road network within the SFSGR will be monitored for the presence of new populations of invasive plants.

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

Known and potential new areas of infestation in road accessible areas will be inspected visually on foot within SFSGR. Infestations are quantified through visual estimation of number of plants, infestation area, and/or by mapping the boundary infestations in a 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. Alien Species Control, LLC staff and project partners from the Tyonek Tribal Conservation District are 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 and/or reported in a smartphone application. Records will include required data fields from the DEC reporting template (record of each control applied, with date, location, and extent of invasive plants presence, etc.). Records will be stored in digital and paper formats for redundancy.

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.

The electronic records and paper files are located at the Contractor’s (Alien Species Control) office. Information from inspections and applications will be retained for future reference and to help guide control decisions.

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3. Prevent Pests

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

Vegetation:

Hilcorp’s “West Side Fields”, which includes the Pretty Creek Unit, Ivan River Unit, Stump Lake Unit, and Lewis River Unit (all within the SFSGR) plus the Beluga River Unit (BRU, outside SFSGR) are remote areas (fly in or barge access only). This limited access helps limit and prevent the spread of invasive plant seeds and propagules that may arrive on equipment and footwear. Hilcorp Alaska, LLC has a policy that equipment is thoroughly cleaned prior to being brought over to the West Side Fields. Most Hilcorp offices and camps (including the Beluga River Unit office and camp) have boot brushes at their entrances to clean off general dirt and detritus including

invasive weed seeds. Hilcorp Alaska shares environmental bulletins about invasive plant species to educate and engage their staff in invasive plant prevention efforts.

The Tyonek Tribal Conservation District (TTCD) has plans to install an educational boot brush station to further prevent the spread of invasive plants at the Beluga airstrip. TTCD conducts ongoing public education and outreach efforts about invasive species (both plants and Northern Pike) to help prevent the introduction of invasive species.

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:

Cultural Controls:	<p>Vegetation:</p> <p>There is no active landscaping nor cultivation in this area so cultural control methods do not really apply. Invasive plants growing on pads could be graded repeatedly or buried, but that increased disturbance would create additional environmental impacts and likely make better habitat for the invasive plants and potentially spread them around rather than controlling them.</p>
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Mechanical Controls:	<p>Hand pulling: 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 – fairly effective for reducing small populations (but these populations exceed that level) - yellow toadflax – hand pulling is not effective - oxeye daisy – hand pulling is not effective - orange hawkweed – hand pulling can stimulate additional growth <p>Mechanical – mowing/cutting Ineffective or counterproductive for most of these species. Mowing may help slow and contain the spread of some of these species but will not eradicate them. White sweet clover may be mowed or weed whacked prior to herbicide application to prevent seed production. Mowing is counterproductive for orange hawkweed.</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
White sweetclover	Milestone	62719-519 (Milestone)
Oxeye daisy	Milestone and 2,4-D LV4	62719-519 (Milestone); 34704-124 (2,4-D LV4)
Yellow toadflax	Roundup Custom for Aquatic and Terrestrial Use	524-343
Orange hawkweed	Milestone	62719-519

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

Following application of controls, Alien Species Control or TTCD 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.

Alien Species Control staff 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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