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

IPM Plan Effective Dates:
July 1, 2025 to June 30, 2027

Management Area Name/Location:
Susitna Flats State Game Refuge (SFSGR); Alaska Department of Fish and Game (ADF&G)

General Site Description:
State-owned lands within SFSGR including forest, meadow, wetland, and riparian habitats; as well as Public Use Facilities such as campgrounds, trailheads, roads, parking areas, oil and gas pads, and utility ROWs.

Land Uses:
Wildlife and fish habitat, hunting, fishing & wildlife viewing; camping, recreational boating, transportation, natural gas production and utility distribution.

Name of Person in Charge:

Heather Langendorf, ADF&G Refuge Manager

Certified Applicator Name(s):

- Tim Stallard, Alien Species Control, LLC (ASC)
- Paul Bennetts, Alien Species Control, LLC (ASC)
- Leandro Gomez, Alien Species Control, LLC (ASC)
- Carter Joyce, Alien Species Control, LLC (ASC)
- Wasilla Soil and Conservation District (WSWCD) employees or subcontractors yet to be determined. Pending certification.

Certification Numbers:

- Stallard (10901-2605-4/6/9),
- Bennetts (11070-2606-4/6/9),
- Gomez (11062-2606-9),
- Joyce (10929-2506-9),
- new staff pending

++

Section 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). Invasiveness Ranking System for Non-native Plants of Alaska, 2008, Carlson et al., U.S. Department of Agriculture).

The full extent to which the range of invasive plants inhabit the SFSGR is unknown.

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) and public values (e.g. aesthetics, food production) within the State Game Refuge.

The known invasive plant species are: 1) white sweetclover (Melilotus alba, rank 81), 2) orange hawkweed (Hieracium auranticium, rank 79), 3) European bird cherry (Prunus padus, rank 74), 4) common chokecherry (Prunus virginiana, rank 74), 5) bird vetch (vicia cracca, rank 73), 6) yellow toadflax (Linaria vulgaris, rank 69), and 7) oxeye daisy (Leucanthemum vulgare, rank 61). Plus, additional highly ranked invasive plants species if found.

Action threshold: the presence of one or more individual plants of these species in the refuge is a problem due to their high levels of invasiveness and potential to spread.

.

++

Section 2. Monitor and Identify Pests

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

Susitna Flats State Game Refuge (SFSGR) encompasses 300,800 acres, much of which is remote, undeveloped, natural wildlife habitat. Only readily accessible areas will be inspected. The road system on the west side of SFSGR is primarily accessed by small plane and then by vehicle on the road system. The east side of SFSGR is accessed via the road system then by boat or on foot.

Most invasive species are known to be or will be found in areas with high public (or utility) use such as roads, trails, trailheads, boat, campgrounds, parking lots, gas production pads and utility ROWs or adjacent to developed areas, such as the Little Susitna Public Use Facility and remote developed campsites along the Little Susitna River.

Areas with identified invasive plant infestations (at gas pads, roads, and ROWs) will be inspected 1 to 3 times per year during the growing season to monitor their populations and response to management.

High use areas will be surveyed for the presence of invasive plants 1 -3 times per year as time and resources allow. Formal and informal inspections may be conducted by ADF&G, ASC, Tyonek Soil Tribal Conservation District, WSWCD employees or sub-contractors and interested members of the public (off-duty biologists, trained recreationalists, etc.).

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. The Little Susitna Public Use Facility, remote developed campsites and along the banks of the Little Susitna River will be inspected.

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 or by boat. Infestations are quantified through visual estimation of number of plants, infestation area, and/or by mapping the boundary of the infestations in a GPS.

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 ASC, the WSWCD, 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 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 ASC or WSWCD offices. Information from inspections and applications will be retained for future reference and to help guide control decisions.

A short report on surveys, control efforts (including application records), and results will be provided to ADF&G SFSGR management each year. The total area (acres) treated with herbicide must be included in the annual report.

++

Section 3. Prevent Pests

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

Vegetation:

SFSGR management will take several steps to help prevent the introduction of invasive plants. During trail or facility maintenance and other refuge improvements only non-invasive species will be planted and certified weed-free topsoil and gravel should be specified if available (material sources will be inspected (for weed-free conditions) if certified weed-free products are not available). Prior to construction, routine maintenance, and patrolling activities, SFSGR staff and contractors should clean vehicles, equipment, boots, etc. after working in an area known to be infested with invasive plants (such as the cities of Palmer, Wasilla, and Anchorage). These invasive plant prevention steps will be included in stipulations for contracts and permits.

Areas leased for gas production in SFSGR include Hilcorp's "West Side Fields", which includes the Pretty Creek Unit, Ivan River Unit, Stump Lake Unit, and Lewis River Unit and part of the Beluga River Unit 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.

Public education and outreach efforts will help prevent the introduction of invasive plants. ADF&G will partner with WSWCD to conduct educational / outreach activities in the Matanuska- Susitna Borough such as public presentations, invasive weed smackdowns, social media posts, and printed educational materials. This outreach includes the message to the public of preventing the spread of invasive species by cleaning potential seeds prior to entering natural areas. Hilcorp Alaska shares environmental bulletins about invasive plant species to educate and engage their staff and contractors 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?

Preventative measures will be ongoing.

++

Section 4. Control Measures

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

Cultural Controls

Vegetation:
Most invasive plant populations are in natural areas where cultural manipulation of the environment does not normally take place, would not be desirable, or would be ineffective on aggressive invasive plants.
Invasive plants growing on gas 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.

Mechanical Controls

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:

- white sweetclover – fairly effective for small populations
- bird vetch – modestly effective for small populations
- European bird cherry and common chokecherry – fairly effective for small trees, small populations
- spotted knapweed – somewhat effective, very small populations
- creeping thistle – not pleasant to pull, but somewhat effective on very small populations
- Not effective for yellow toadflax and oxeye daisy.
- Not effective or even counterproductive for reed canarygrass and hawkweed

Tarping/cover:
This method has been tried (in at least five projects) at great expense but poor results in the Municipality of Anchorage for reed canarygrass, bird vetch, and creeping thistle. The invasive plants readily 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.

Mowing/cutting:
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.

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
Bird cherry and chokecherry	Roundup Custom or Cornerstone 5 Plus (glyphosate); or EZ-Ject Diamonback Herbicide Shells (glyphosate); or Ecomazapyr	524-343 (Roundup); 1381-241 (Cornerstone 5 Plus); 83220-1 (EZ-Ject Diamondback); 81927-24 (Ecomazapyr);
Orange or meadow hawkweed, spotted knapweed, creeping thistle, oxeye daisy, or other invasive plant in the sunflower family	Milestone and/or 2,4-D LV4 or Transline	62719-519 (Milestone); 34704-124 (2,4-D LV4) 62719-259 (Transline)
White sweetclover; bird vetch; or other invasive plant in the pea family	Milestone or Transline	62719-519 (Milestone) 62719-259 (Transline)
Yellow toadflax	Roundup Custom or Cornerstone 5 Plus (glyphosate)	524-343 (Roundup); 1381-241 (Cornerstone 5 Plus)

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

Following application of controls (cultural, mechanical, or chemical), ASC or WSWCD will re-inspect each treated area in the following growing seasons whenever possible to determine if the applied controls achieved the target control level. Reapplication of control methods will likely be necessary to achieve full control.

ASC or WSWCD 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.

Heather Langendorf, Refuge Manager
ADF&G, Division of Wildlife Conservation
907-861-2112
heather.langendorf@alaska.gov