# State of Alaska

## Invasive Species

Division of Agriculture

Alaska Department of Natural Resources

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A broadly applicable definition of Invasive Species comes from the Presidents Executive Order 13112 which states that an invasive species is one that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

•This definition broadly applies to all taxa including animals, insects and plants

•What makes a non-native plant cross that threshold into a non-native INVASIVE plant is often what exists, or better, what doesn't exist in the ecosystem it is introduced into. Prolific invaders tend to lack some piece of their native habitat or ecosystem that keeps its population in check. Competition by companion organisms, pathogen, climatic factors etc.

From a plant program perspective, as that is mainly what our program focuses on, the key is not to label ALL non-native plants as invasive-this is both exhaustive from a management standpoint and unnecessary. The key is to be aware of the invasive POTENTIAL that a plant may have using information available from other regions experience with the plant, focusing on the most climatically similar locations.

To give you an idea of scope…in Alaska, plant biologists and natural resource managers are tracking 332 non-native plants for potential invasiveness.

**The key is POTENTIAL INVASIVENESS. Not all new species (plants or otherwise) will be an issue. Only a small portion of those "tracked" species may establish in natural areas, and an even smaller portion of those will cause a problem.


The Division of Agricultures Invasive Plant and Agricultural Pest Program is driven by four main program areas:

•Inspection and Grading of Agricultural Products

- •Weed Free Forage and Hay Program: This is a certification process that allows forage and hay producers in the state of Alaska to have their fields inspected and certified so they can sell a Weed Free product to buyers.
  - •Value Added Product (not required by the state)
  - •Program housed by the Soil and Water Conservation Districts with annual Inspector trainings provided through Division of Ag
- •Weed Free Gravel: This is a developing program in Alaska that would operate similarly to the Weed Free Forage and Hay Program. This program would allow some gravel pit operators to produce a value-added gravel product that could be used in areas that are sensitive or that are otherwise weed-free.

•Regulate and control the entry, transport of seeds, plants and other horticultural or agricultural products

- •Seed Laws, Quarantine Laws, Pest Laws (falls within Division of Ag): Restricted and Prohibited Seed Lists,

•Control and Eradicate the spread of pests: inspections, quarantine, management

•Coordination, Planning, regulation and review:

- •My position: Invasive Weeds & Agricultural Pest Coordinator
- •Strategic Plan
- •Coordination: state departments & agencies, UA CES, AACD, ADF&G

I will go into more detail on the individual projects that fall within each of these program directives.


Published last year, the Division of Agriculture put together a Strategic Plan for Invasive Weed & Agricultural Pest Management and Prevention in Alaska. It was written to help guide prevention and management of invasive species by the DNR and its partners. It includes three main pieces

- Objections & Action Strategies
- Annual priorities and goals
- Annual Report→completed goals, highest priority action strategies, emerging issues

This plan allows for flexibility in implementing action strategies and identification of emerging issues that may warrant action before a new plan is written.

Does not cover invasive species covered by other Departments (Fish & Game, DEC)

The Mission Statement: "The Department of Natural Resources manages noxious weeds, invasive plants, and agricultural pests to maintain uninterrupted productivity of natural and agricultural resources."

- Prevention: most critical aspect of invasive plant and ag pest management. Action such as quarantine and inspection

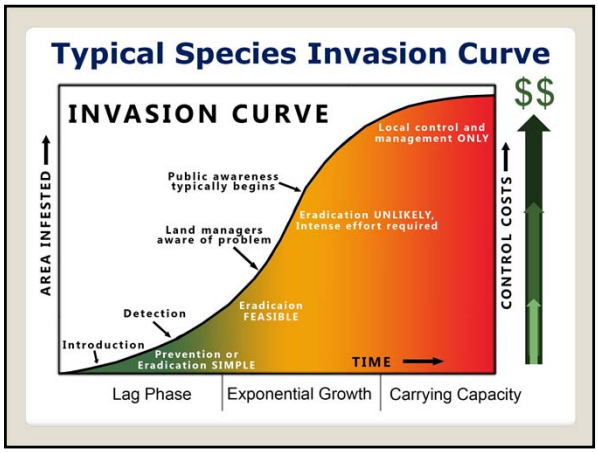

Currently, 11 AAC 34 encompasses seed laws (including prohibited and restricted noxious weed list), quarantine laws and pest laws.

Over the past two years, the Division of Agriculture has evaluated the existing regulations regarding Invasive Plants and Agricultural Pests and have been processing through an internal review

•We've moved to make the regulations more applicable to all invasive weeds and agricultural pests beyond the existing seed regulations.

•Develop process that involves public and stakeholders in identifying species that should be managed by region. This regional process would likely utilize the existing boundaries and experience from the Soil and Water Conservation Districts and other stakeholders.

These amendments are in the final review process awaiting the Commissioner's final approval before the y are available for public review.




This species invasion curve is a common, simplified depiction of the growth of an invasive species in a new environment and it's impact to natural resources over time.

The "invasion" can be broken down into three characteristic phases of growth activity which correlate with specific management approaches and relative estimated cost of those type of management activities.

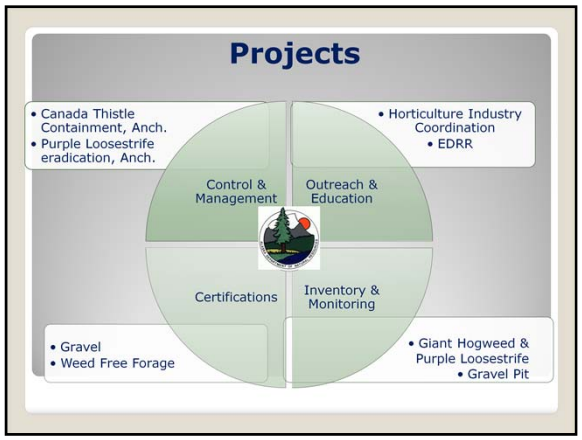
•During the LAG PHASE new species are found, their numbers are small and their ecological impact is relatively low. Management in this phase centers around Early Detection and Rapid response. This is the least expensive time to manage aside from prevention.

•A population enters the GROWTH PHASE and begins to spread quickly, impacting natural resources. As the species grows and disperses, natural resource managers start to take notice and eventually, it becomes visible to the general public as well. This is when, for example, a plant that was once only found in a few disturbed places along the road in Anchorage is now being spotted on off-road trail systems or other wildland areas with more frequency. Management in this phase transitions from simple eradication of isolated populations to a spectrum of feasibility. That feasibility diminishes dramatically as populations expand and as funding is limited.

→Activity in this phase is also what makes a new, non-native species, invasive. Up until this explosion of growth, it is simply a new species. :Many new species may arrive to AK every year but not all exhibit the aggressive growth pattern that we characterize as "invasive."

•An invasive species will eventually reach its ecological amplitude or environmental carrying capacity where it occupies all the space available and has maximized impacts to natural resources. MANAGEMENT in this phase is limited to local control and management ONLY as it is too widespread to consider eradication. Also, given the extent, management will be the most costly and impacts to agriculture, wildlife, recreation etc will be long-lasting.

This concept is important as you look at where we focus our projects and the importance of managing for species that are not YET here.

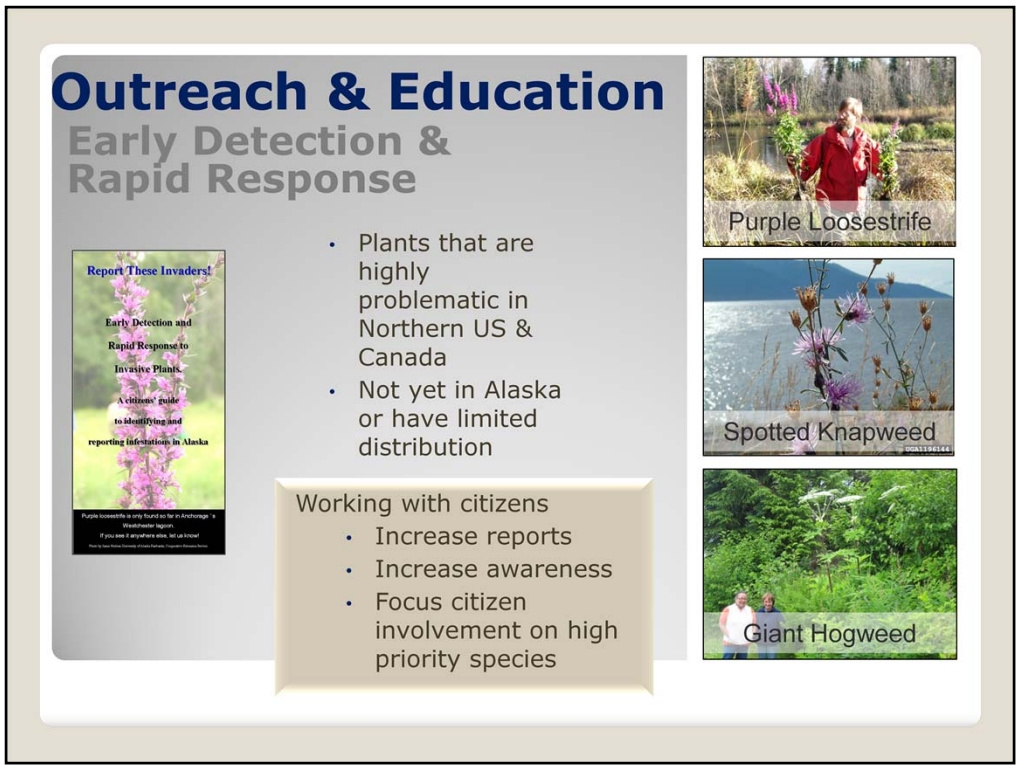



Currently, our Invasive Plant and Agricultural Pest Programs fall within four categories, with many overlapping into multiple areas.

- Control and Management: this means are actively removing known problems.
  - Canada Thistle Control
  - Purple Loosestrife Eradication
- Inventory and Monitoring
  - Giant Hogweed and Purple Loosestrife
  - Gravel Pit
- Certification
  - Weed Free Forage
  - Gravel
- Outreach and Education
  - Horticulture industry coordination
  - Early detection and Rapid Response (EDRR)

Many of these individual programs or projects have elements of the other categories. For example any one of these projects has an education and outreach component included.

We are fortunate in Alaska to have a relatively limited number of invasives to manage. It is common for weed coordinators from other states to comment that we are where they were 20 years ago and they wish they could have acted more swiftly and decisively to prevent some of the agricultural and economic losses they have seen since. This is largely due to the geographic and climatic barriers that we all know and love. It is also due to the large percentage of our land remaining wild and free of highways and people. As we grow, as a state, there are more and more opportunities for invasives to take hold in Alaska.



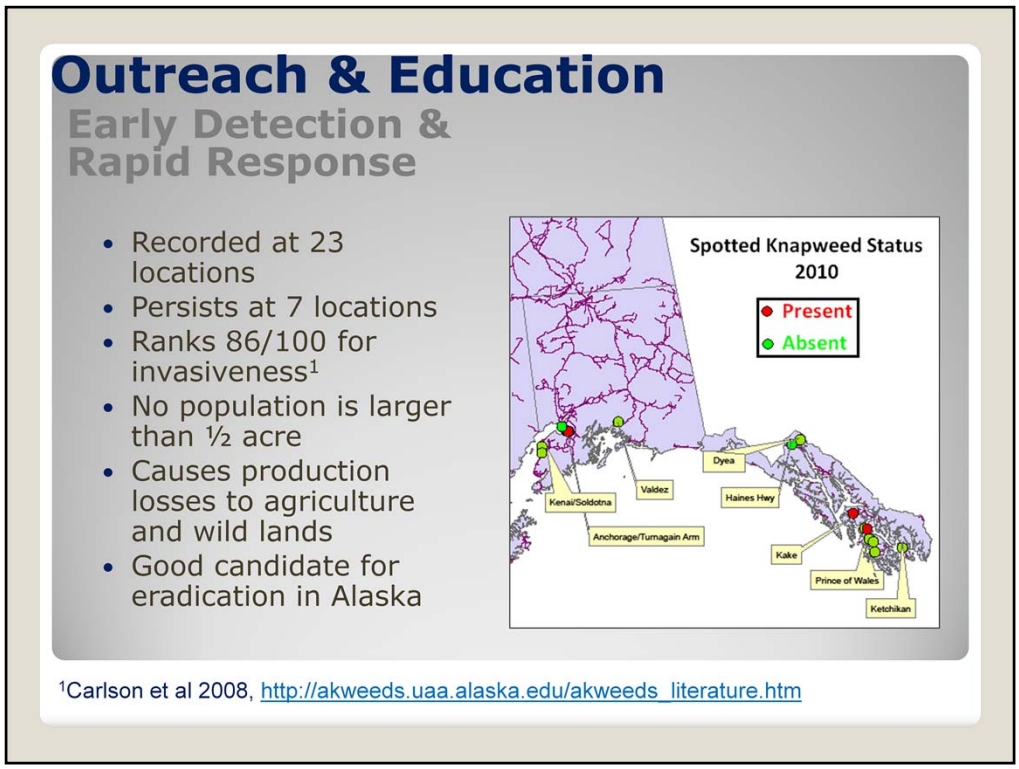

Currently, we have the opportunity to largely focus on Early Detection and Rapid Response (EDRR) , education and other management tools that fall within the early stages of the invasion curve.

- Surveying for new species
- Eradicating small populations manually
  - Purple Loosestrife
  - Spotted Knapweed
  - Giant Hogweed

The EDRR program focuses on these and other species that have been known to exhibit highly invasive and noxious behavior in other similar, or adjacent regions. They are either not yet present in Alaska, or have a very limited distribution. They are the bad players; the species known to cost other states millions of dollars to manage.

This program focuses on outreach (the brochure is shown here) that is geared towards the general public and encourages citizen reporting. These brochures have information on how to identify these high priority species, possible look-alikes, and directions on how to report.

The citizen report helps in the Early Detection part of the program, but a key component is the Rapid Response. Recent "rapid response", and ongoing efforts within the Division of Agriculture have involved removing the one known population of purple loosestrife in Anchorage and one known population of Giant Hogweed in South East.




A more large scale Rapid Response program that was undertaken in 2009 and 2010 involved the eradication of a particularly damaging species: Spotted Knapweed. Outside of Alaska, Knapweed is known to form dense stands reduceing forage quality for livestock and wildlife. The knapweed family of plants are known to be allelopathic which contributes to its success at forming dense colonies-excluding other plants. Other states including Montana, Wyoming, Oregon and Washington have extensive infestations of spotted knapweed which are estimated to cost millions of dollars annually to control.

This species, while present in the state, is a good candidate for eradication because it is not widespread and the infestations are still relatively small.

In 2009 and 2010, Division of Agriculture staff traveled to each known location and mechanically removed plants. By 2010, only 7 infestations persist and they are monitored each year.

In 2011 a new population of spotted knapweed was identified near Jonesville Mine. Plans for control and further inventory are being made for summer 2012.


•Developing surveys that approach each species individually so we can get a sense of what is a problem in what region. This will allow us to develop outreach materials that the horticulture industry would like to see and provide to their customers.

Upcoming goals..

-Continue surveys to develop a regional list of species that are of concern for the horticultural industry

-Identify where outreach information is desired and can be provided


Forest Service

Canada thistle is considered a noxious weed in 35 states, including Alaska. Canada thistle is widespread in Anchorage, but has a limited distribution across the whole of South Central Alaska. The vast majority of the infestations within Anchorage are small but are capable of becoming a source for the spread of new populations to the areas surrounding Anchorage. The Mat-Su valley is an agricultural area with very little canada thistle present, and the Kenai Peninsula already has Canada thistle in its sights as a species for eradication. Not to mention to many natural areas directly adjacent to Anchorage, which, if it were to become established, Canada thistle could negatively impact natural resources, wildlife and recreation.

The goal of this project is to contain the existing populations and create a management plan for Canada Thistle in the Anchorage CWMA.

## Control & Management

- Prioritize infestations
- Control:
  - Coordinated DOT mowing roadside infestations
  - Manual removal of small (contain)
  - Pursuing DEC permit for herbicide application

Canada Thistle Containment, Anchorage

Prioritize infestations based on their location either along or in close proximity to:

- Highways headed out of Anchorage
- State and federal lands
- Greenbelts
- Proximity to waterways
- Size

These factors all represent potential pathways for additional contamination.

Upcoming goals…

-Start working on Pesticide Use permits for sites that are in the ROW and have the potential for being treated.

-Work with DOT to continue mowing throughout the season to prevent seed production

-Completing the Canada Thistle Management plan for Anchorage


With funding from USFWS, the Division of Ag worked within the Anchorage area to get rack cards and other means of outreach to the community about the threat that Purple loosestrife or Lythrum salicaria poses to wetlands and streams. This outreach took the forms of mailings, Public Service Announcements, a bus banner that could be seen driving the streets of Anchorage, and other newsletters.

Using surveys performed by the UAF CES, mailed outreach was targeted at the landowners of known plantings, the areas directly around those plantings, and potential at risk areas including neighborhoods surrounding streams and wetlands.

The Division of Ag recognized the potential threat that loosestrife poses to natural resources in Alaska if it allowed to persist and spread. Purple loosestrife is listed on the state prohibited noxious weed seed lists prohibiting the sale and transport of loosestrife seeds in the state. This project offered a Non-regulatory approach to provide the opportunity for the state to partner with landonwers in preventing the spread of loosestrife to valued ecosystems.

Upcoming goals…

-Outreach


In 2010 and 2011 a directed mailing was sent which included a card offering to replace your loosestrife, free of charge, with CES suggested alternatives.

A total of 10 contacts were generated through the mailings…

2010: 4 contacts made through mailings

2011: 6 additional contacts

All in all, 7 plants were replaced at two different locations

# Control & Management

## Elodea

Impacts

- Degrade Fish Habitat and displace native flora and fauna
- Make boat travel difficult and reduce recreation opportunities
- Endanger safe float plane operation
- Alter freshwater habitats, including decreased flow and increased sedimentation

Elodea was discovered growing aggressively in Chena Slough in 2010. Surveys in 2011 found it growing extensively in 3 Anchorage Lakes as well

- Delong Lake
- Sand Lake
- Little Campbell Lake

FAIRBANKS SOIL & WATER CONSERVATION DISTRICT

# Control & Management

## Elodea

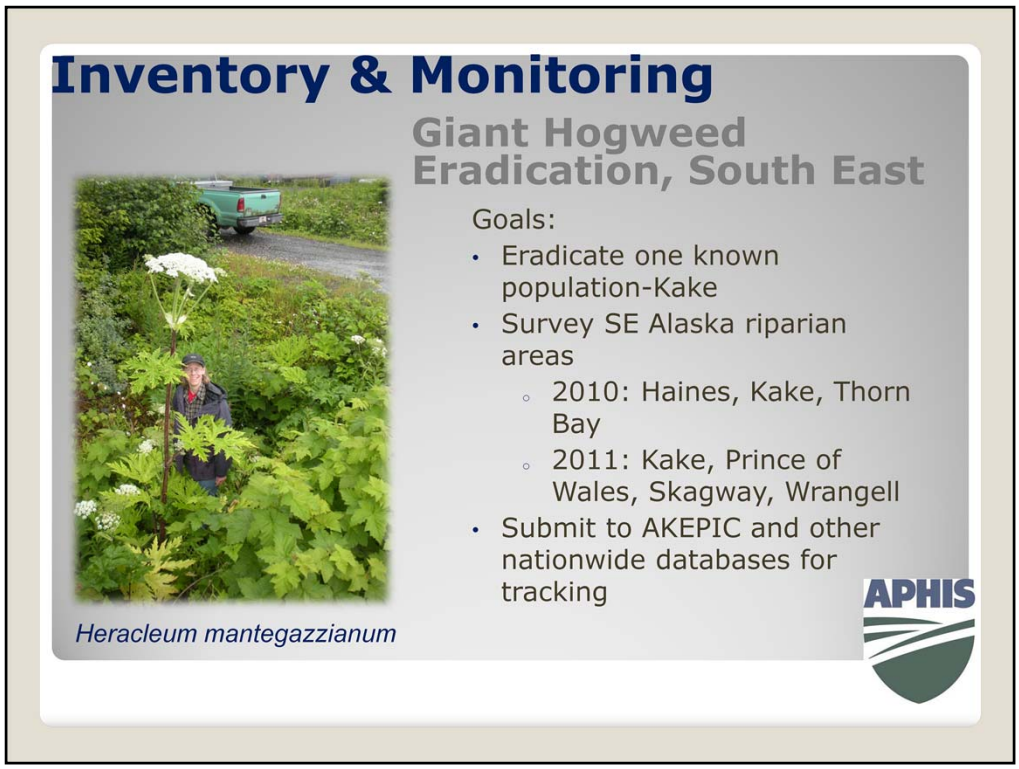
Control Trials

- Manual Removal (divers)-pictured above
- Suction Dredge
- Chemical Application

Outreach


Coordinated Statewide Management

FAIRBANKS SOIL & WATER CONSERVATION DISTRICT




Project Goals:

Ensure early detection and timely response to infestations of giant hogweed along priority salmon spawning waterways adjacent to human settlements in in SE Alaska.

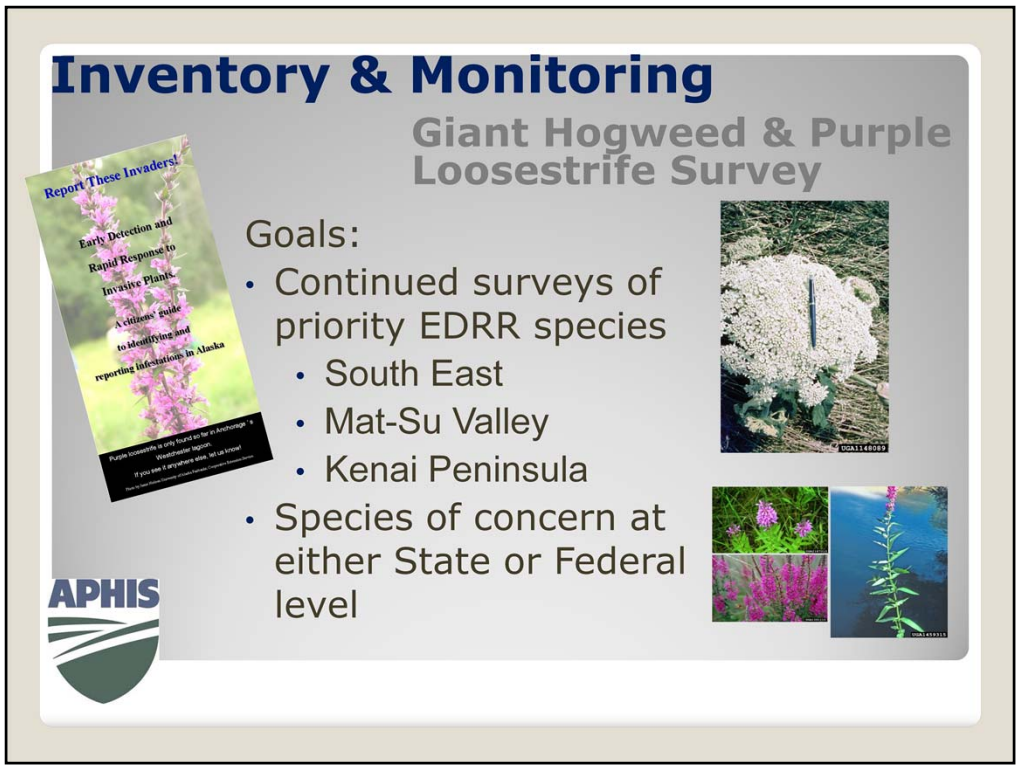
-First known population in Alaska found in Kake in 2010. The landowners were cooperative with removal.

-Monitor population each season

-Inventory other SE areas for Giant Hogweed:

2010: Haines, Kake, Thorn Bay

2011: Kake, Prince of Wales, Skagway, Wrangell




The first known infestation of purple loosestrife was detected in 2005 on a waterway in an Anchorage city park. Giant Hogweed was first found growing in Alaska in 2010. Both species have been identified at the state or Federal level as species of concern.

Continued survey's for both Purple Loosestrife and Giant Hogweed but expanding from Anchorage and South East to the Mat-Su Valley and Kenai Peninsula.

-Continued outreach for these EDRR species

# Inventory & Monitoring Certification

## Gravel Pit Surveys & Certification

White sweet clover on Matanuska River floodplain

Goals:

- Survey state and BLM gravel pits on Highways (2010 & 2011)
- Outreach to gravel producers
- Certification-Voluntary program
- Value added product

| Dalton, Elliot, Steese, Taylor and Top of the World Hwys | | | |
|---|---|---|---|
| Species | Common Name | Number of Pits infested | Percent of pits infested |
| Melilotus alba | White sweet clover | 24 | 20.7% |
| Crepis tectorum | Narrowleaf hawksbeard | 33 | 28.4% |
| Hordeum jubatum | Foxtail Barley | 79 | 68.1% |
| Hieracium umbellatum | Narrowleaf hawkweed | 4 | 3.4% |
| Clean Pits | | 26 | 22.4% |
| A total of 116 pits surveyed | | | |

BLM funding

Inventory gravel pits for invasive weeds and colonizing native species to determine what weeds are an issue in gravel pits, and what native plants may be early colonizers to assist in revegetation. Gravel has a high probablility of being a primary vector of invasive plants, this project aims to identify which invaisve plants are common issues. This information will be used to implement a weed free gravel certification program based on standards developed by the North American Weed Management Association and tailored to Alaska.

The Dalton, Elliot, Steese were done in 2010
Taylor in 2011 (Fairbanks Soil & Water)
Certification using NAWMA (North American Weed Management Association)

Upcoming goals…
-Adopt inspection protocol for certifying gravel as weed free
-develop list of weeds that are not allowed for certification

# Inventory & Monitoring Certification

## Weed Free Forage & Hay

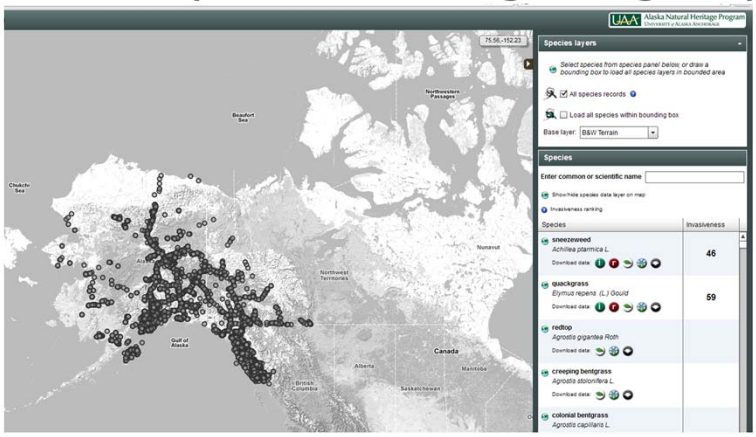

- Voluntary program established for 6 years
- Value added product
  - Revegetation/Erosion control
  - Mushing
  - Backcountry horse riding
- Field inspector training held annually

Field inspections hosted by SWCDs across the state


The Alaska Invasive Species Working Group and the Committee for Noxious and Invasive Plants Management hold a joint conference each Fall to discuss projects, goals and challenges.

# Coordination

- AKEPIC (Natural Heritage Program)




Tracking & Ranking Non-native plant species in Alaska

http://aknhp.uaa.alaska.edu/botany/akepic

# Any Questions?

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