

A Risk Assessment of Invasive Alien Species in the NWT

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In collaboration with

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 - Tom Lakusta, Forest Management, GNWT, Hay River
 - CIMP, Indian and Northern Affairs, Yellowknife
- Pippa Seccombe-Hett, Aurora Research Institute, Inuvik
- Invasive Alien Species Partnership Program , Environment Canada
- Eric Snyder, Steve Curtis, Marilyn Anion, NatureServe Canada
- Melissa Elliot and Dawn Bazely, York University



Northwest Territories Environment and Natural Resources





Outline

- ☼ Definitions
- ☼ Goals
- ☼ Objectives
- ☼ Results
 - ☼ List of alien plants and insects
 - ☼ Pathway analysis
 - ☼ Community-based protocols
- ☼ Next steps
- ☼ Role of industry

Definitions

- ✿ **Alien** = species that have been introduced as a result of human activities into ... North America, the Northwest Territories, regions outside their native range.
- ✿ **Invasive** = harmful alien species whose introduction or spread threatens the environment, the economy, or society.
- ✿ **High:** Invades natural habitats quickly, hard to eradicate.
- ✿ **Medium:** Invades man-made or disturbed habitat; can invade natural habitats; can be eradicated
- ✿ **Low:** Invades man-made disturbed habitats only , or some natural habitats with natural disturbances; can be eradicated.

Why now?

- ☀ The North **lags behind** other jurisdictions in North America in preventing the introduction of and controlling invasive alien species (IAS) that could threaten northern ecosystems.
- ☀ There is a **general lack of knowledge** and research on these species in the NWT.
- ☀ In the Canadian North we may have been **complacent** in our view of the threats of invasive alien species, assuming that our **harsh climate** will prevent most species from establishing themselves.
- ☀ With increasing **development and climate change**, all northern organizations are prepared to increase awareness of risks and help reduce that risk.
- ☀ Many **communities** have expressed **concern** over the potential effects of IAS in our northern ecosystems.

Goals

1 Increase Knowledge and Prevention Capacity

2 Increase Early Detection Capacity



Objectives

1 Increase Knowledge and Prevention Capacity

- a) List of known alien plants
- b) List of species likely to arrive
- c) Pathway Analysis – how do they arrive?

2 Increase Early Detection Capacity



Objectives

1 Increase Knowledge and Prevention Capacity

- a) List of known alien plants
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2 Increase Early Detection Capacity

- a) Community-based Protocols
- b) Communication – How to ID?
- c) Network: Roles and Responsibilities in NWT?

Results

Goal 1 : Knowledge and Prevention

Known Invasive Alien
plants :
NWT Virtual Herbarium

Photos from
Road Survey
By M. Oldham
E-Copies available

2006 Survey of Exotic Plants along Northwest Territories Highways

By Michael J. Oldham



Presented to the Government of the Northwest Territories

January 2007

Known Invasive Alien Plants – as of 2008

Melilotus albus* and *M. officinalis

Sonchus arvensis

Crepis tectorum

Trifolium hybridum

Medicago sativa

Bromus inermis



White Sweet-Clover



Why **White Sweet-Clover** is high priority.... example of how it can take over along a Yukon Road....

.... This species is now in naturally disturbed habitats, like in the Mackenzie Delta... is in many places in the NWT.

Known Invasive Alien Plants – as of 2008

Melilotus albus and *M. officinalis*

Sonchus arvensis

Crepis tectorum

Trifolium hybridum

Medicago sativa

Bromus inermis



Field Sow-thistle

Known Invasive Alien Plants – as of 2008

Melilotus albus and *M. officinalis*

Sonchus arvensis

Crepis tectorum

Trifolium hybridum

Medicago sativa

Bromus inermis



Narrow-leaf Hawk's-beard

Known Invasive Alien Plants – as of 2008

Melilotus albus and *M. officinalis*

Sonchus arvensis

Crepis tectorum

Trifolium pratense* and *T. hybridum

Medicago sativa

Bromus inermis



Red and Alsike Clovers

Known Invasive Alien Plants – as of 2008

Melilotus albus and *M. officinalis*

Sonchus arvensis

Crepis tectorum

Trifolium hybridum

Medicago sativa

Bromus inermis



Alfalfa

Known Invasive Alien Plants – as of 2008

Melilotus albus and *M. officinalis*

Sonchus arvensis

Crepis tectorum

Trifolium hybridum

Medicago sativa

Bromus inermis



Smooth Awnless Brome

Known Invasive Aliens – as of 2008

Amber-marked Birch Leafminer



-106 alien plant species
-12 alien insect species



Northwest
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NWT Virtual Herbarium
Version 2008

Alien plants - locations in black

Legend
IIWT DAO PLANTS Corrected June 2008 Events

◆ <all other values>

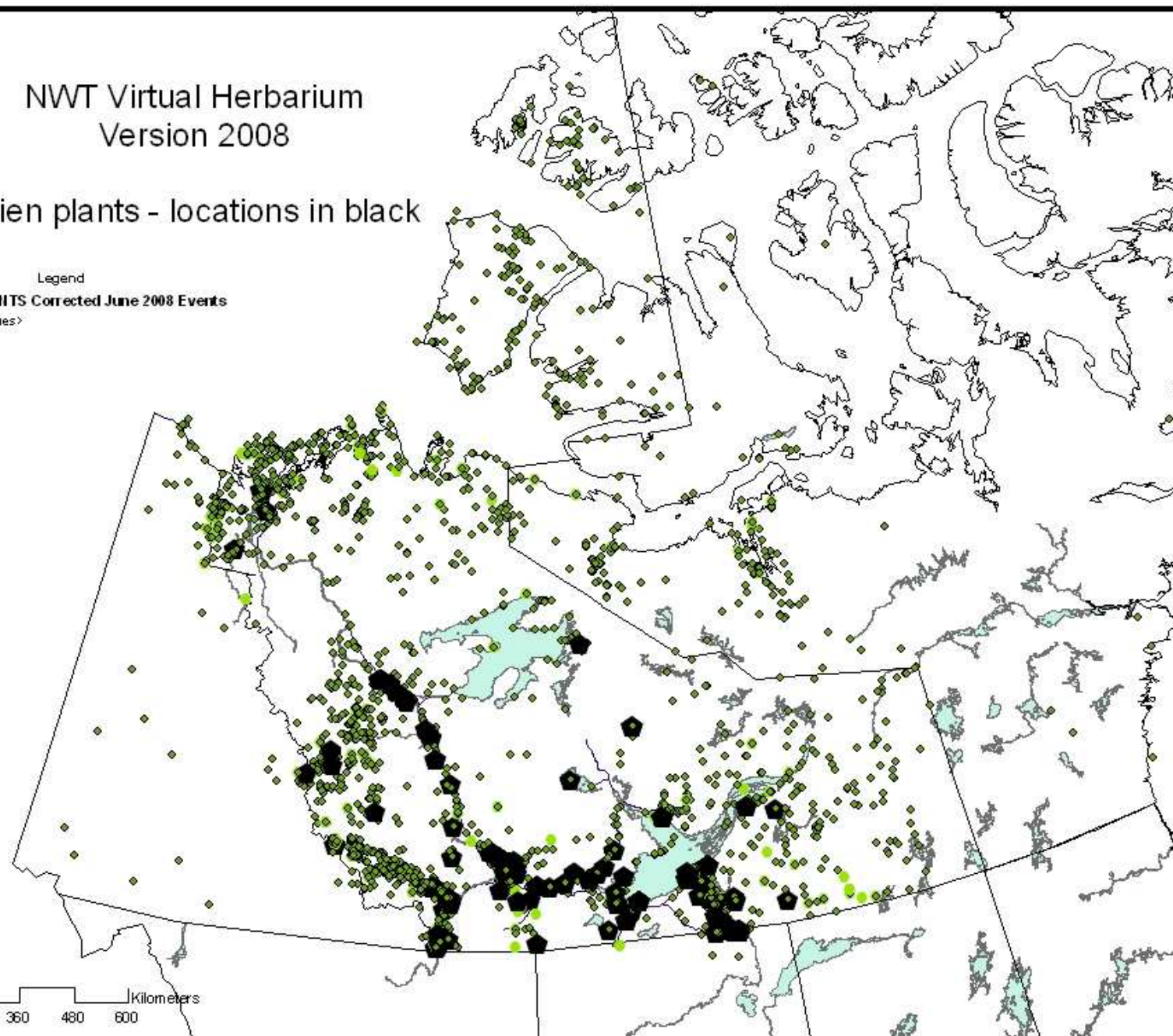
GSRANK

◆

◆ Alien

◆ Maybe at risk

0 60 120 240 360 480 600 Kilometers



Lessons From Other Northern Regions

✿ 72 alien species in marine habitats, 49 in estuaries, and 82 in lakes in Scandinavia

✿ GO TO North European and Baltic Network on Invasive Alien Species
(www.NOBANIS.org)

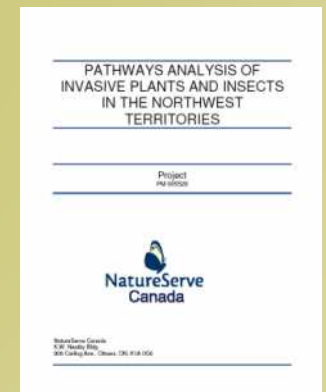
✿ 299 alien plants in Alaska

✿ GO TO <http://akweeds.uaa.alaska.edu/>

Based on the literature review, consultations with experts and questionnaire results, **hundreds of plants** were identified as **potential** invasive threats to the Northwest Territories.

- Most are good at establishing in **disturbed habitats**
- **Detailed investigations on pathways are needed to determine whether potential for each is negligible.**

Eric Snyder, Steve Curtis, Marilyn Anion, NatureServe Canada



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Pathway Analysis: How do they come here and spread?

☼ We know how only 12% of alien plants and 60% of alien insects came to the NWT

☼ Most are transported unintentionally

☼ *Resource Extraction Industries*

☼ *Road Maintenance Vehicles*

☼ *Cars, Trucks and other Road Vehicles*

☼ *Boats and Boating Accessories*

☼ *Dog Sledding*

☼ *Horticulture and Landscaping*



Pathway Analysis: How do they come here and spread?

☀ Transported intentionally

☀ *Remediation at Construction and Resource Extraction Sites*

☀ *Horticulture and Landscaping*

☀ *Agriculture, Ranching*



Pathway Analysis: Recommendations from NatureServe Canada

- ✿ Better consultation and communication on alien species in the NWT
- ✿ Early detection and control measures
- ✿ “Use Local or Reduce Seeding” – Use mechanical methods
- ✿ « Clean Your Machines at the Door » - more inspections
- ✿ Policy, legislation & best practices

E-Copies Available

PATHWAYS ANALYSIS OF INVASIVE PLANTS AND INSECTS IN THE NORTHWEST TERRITORIES

Project
PM 005529



NatureServe Canada
K.W. Neatby Bldg
906 Carling Ave., Ottawa, ON, K1A 0C6



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Community-based Monitoring

Protocols produced with input from communities as part of ...



3 November 2008 | [Home](#) | [Contact](#) | [RSS](#)

GAPS INITIATIVE
2007-2010



INTERNATIONAL POLAR YEAR • DET INTERNASJONALE POLARÅRET

МЕЖДУНАРОДНЫЙ ПОЛЯРНЫЙ ГОД • ၂၀၀၇-၂၀၀၉ ခုနှစ်များအတွက် အင်္ဂလိပ်စာဖြင့် ရေးသားထားသော အချက်အလက်များကို အောက်ပါအတိုင်း ဖော်ပြထားပါသည်။

www.ipygaps.org/

Learned so far:

- Simple forms and simple reporting mechanisms
- Multiple ways to communicate
- Report back to people on results
- Inform – consult on what to do next (controls, eradication, etc)
- Protocols ready for testing in summer 2009

Role of NWT Biologists/Foresters?



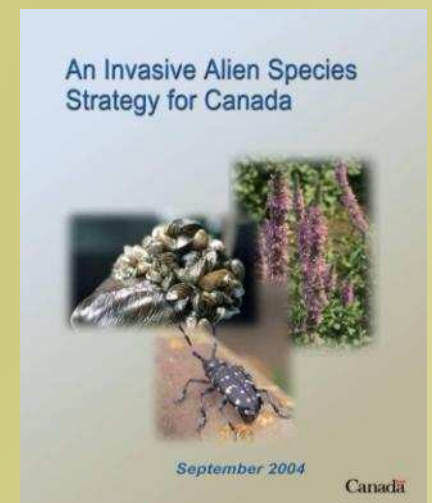
- ☼ **Centre of communication** with communities
- ☼ Help send **specimens** to experts
- ☼ New **webpage** in 2009
- ☼ Invitation to be part of a « **NWT Invasive Alien Species Network** »
- ☼ **Share** experiences on good practices

Next steps

- ☼ Pamphlet on Alien Plants and Insects (2008-09) - need your input on content
- ☼ Website (2009-10)
- ☼ Policy and best practice documents (2009-10)

Suggestions?

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Acknowledgements

- Gene Hachey, Agriculture Agreement,
- Tom Lakusta, Forest Management, GNWT, Hay River
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- Mike Oldham, Ontario Natural Heritage Information Centre

QUESTIONS and COPIES OF REPORTS

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