



Canadian Land Trust Summit 2022

The Urge to Purge: Terrestrial Invasive Species on Nature Preserves  
presented by Bethany Pohl





# Agenda:

- Invasive species survey
- Removal prioritization
- ID and removal techniques
  - Questions





# CONSERVE:

To conserve areas in New Brunswick that are ecologically significant, establishing nature preserves that remain protected forever;





# ENGAGE:

To engage with the public on the importance of land conservation, New Brunswick's natural heritage, biodiversity, and species at risk;





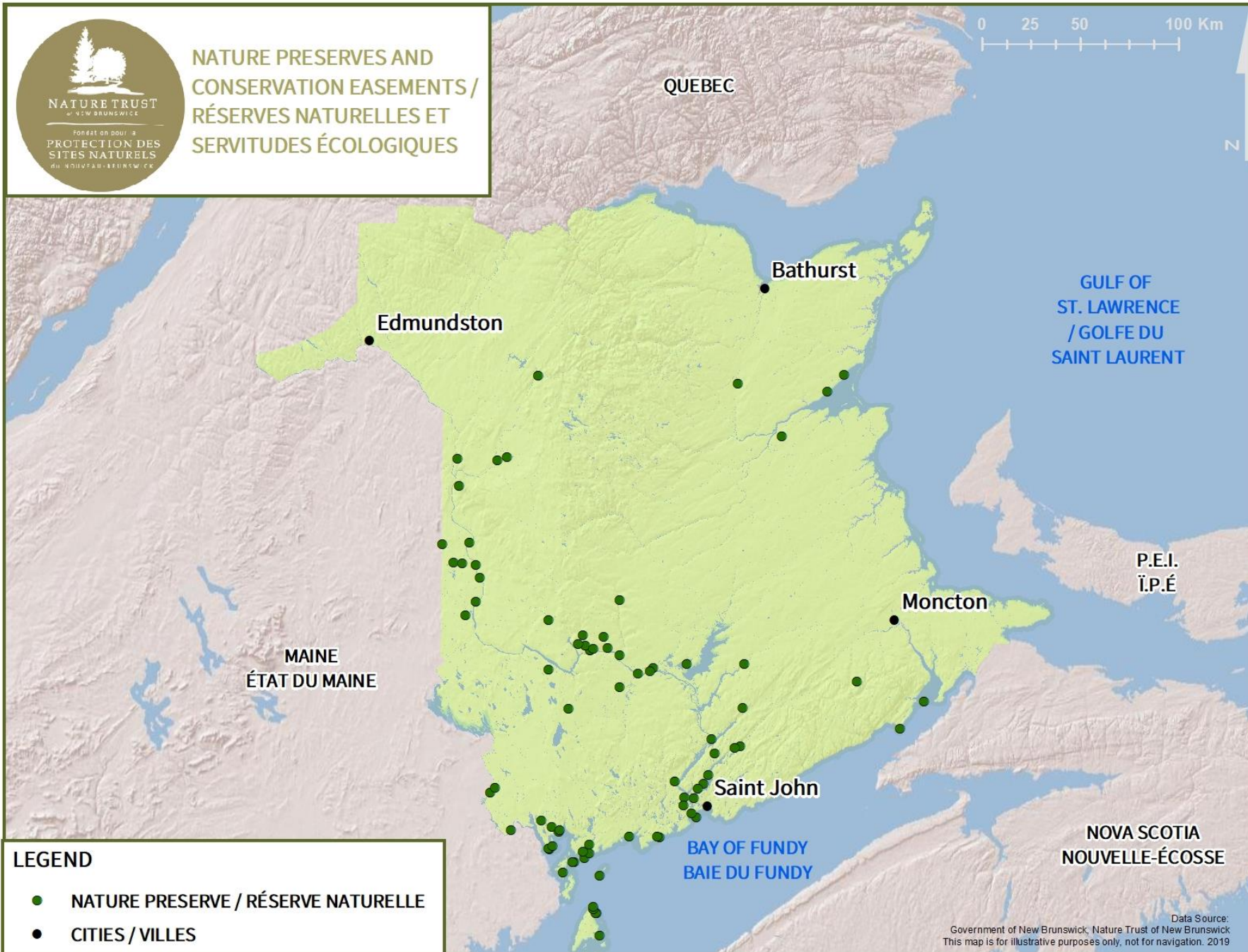
# STEWARD:

To steward the nature preserves through a network of volunteers and supporters





NATURE PRESERVES AND  
CONSERVATION EASEMENTS /  
RÉSERVES NATURELLES ET  
SERVITUDES ÉCOLOGIQUES



75 nature  
preserves

11,000  
acres



# Resources:

- ID slides from Shannon McGaffrey (2014), Nature Conservancy of Canada – Guide to Identifying Invasive Species (AT)
- Ontario Invading Plant Awareness Program
- **“Grow Me Instead!”** from the Ontario Invasive Plant Council
- NB Invasive Species Council Guide and Website: [nbisc.ca](http://nbisc.ca)
- Kate Drier – Master project on invasive species surveying





# What is an Invasive Alien Plant Species

Exotic plant that was introduced; outcompetes native plants, often no predators.

Often produce many seeds with an extensive root system  
Hardy, spreads quickly along corridors or waterways.





# Our Nature Preserves & Invasive Species

- Started removal efforts in 2016
- 49+/75 preserves have an invasive or exotic species present



A lush green forest scene with a stream and fallen logs. The text is overlaid on the image.

# An Invasive Species Survey Strategy for Terrestrial Plants in New Brunswick

By Kate A. Drier

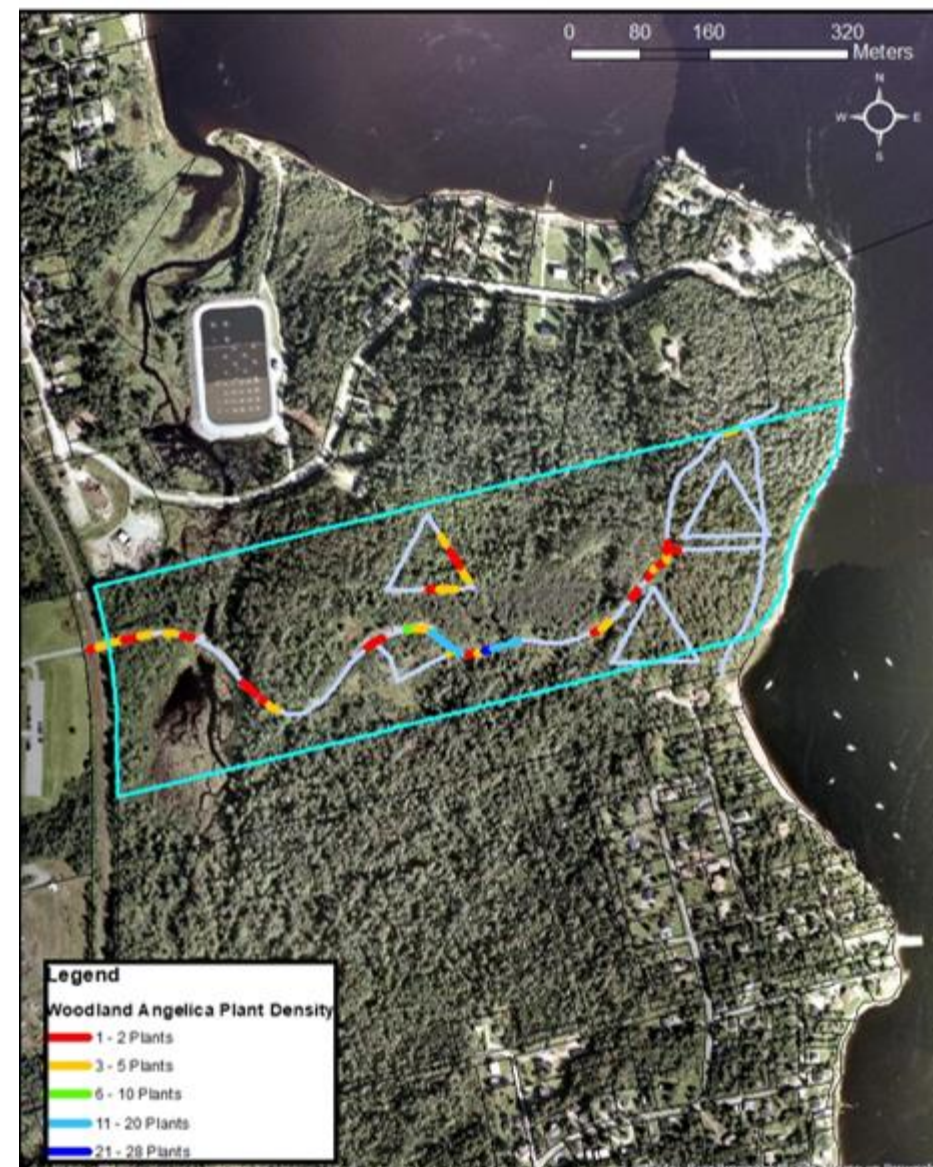


Table 1. Recommended survey method used based on property size.

Property size	Survey Method
< 10 ha	Stratified continuous sampling of 10' intervals at a minimum site range of 5'
> 10 ha	Stratified continuous sampling of 10' intervals at a minimum site range of 5' and random plot sampling of 100m/side with a 5m sight distance

The chosen sites include the Margaret Coburn Cameron Woods Preserve, Blueberry Hill Nature Preserve, Speer Hillside Nature Preserve, and Ferris Street Forest and Wetland Nature Preserve.

### Blueberry Hill Nature Preserve







# Invasive Species Nature Trust of NB prioritizes

- Infringing on a key ecological attribute of preserve (important species or habitat)
- Management over eradication
- Allelopathy (more severe)
  - Production of compounds that inhibit growth of other plants



# Giant Hogweed (*Heracleum mantegazzianum*)

(Forest, Grasslands, Roadside/Field, Wetland)



## Identification:

-grows up to 14 feet; sharply uneven and lobed leaves; stems 2-4 inches, hollow, purple blotches and coarse hairs.



# Leaves



Cow Parsnip



Woodland Angelica



Giant Hogweed



# Invasive Species Removal Prioritization Chart

	Common Reed	Garlic Mustard	Glossy Buckthorn	Japanese Barberry	Japanese Knotweed	Lupines	Purple Loosestrife	Woodland Angelica
Difficulty of Removal 1 - easy 4 - hard	Small - 3 Large - 4	Small - 1 Large - 3	Small - 1 Large - 4	Small - 2 Large - 4	Small - 3 Large - 4	1	Small - 1 Large - 3	Small - 1 Large - 4
Allelopathy 1 - very 4 - not	1	3	2	2	1	4	4	4
Spread in Province 1 - no spread 4 - established	2	1	4	2	4	4	4	4
Length of Seed Bank 1 - >10 years 4 - <2 years	4	1	2	4	2	4	1	2
Total Score	Small - 10 Large - 11	Small - 6 Large - 8	Small - 9 Large - 12	Small - 10 Large - 12	Small - 10 Large - 11	13	Small - 10 Large - 12	Small - 11 Large - 14

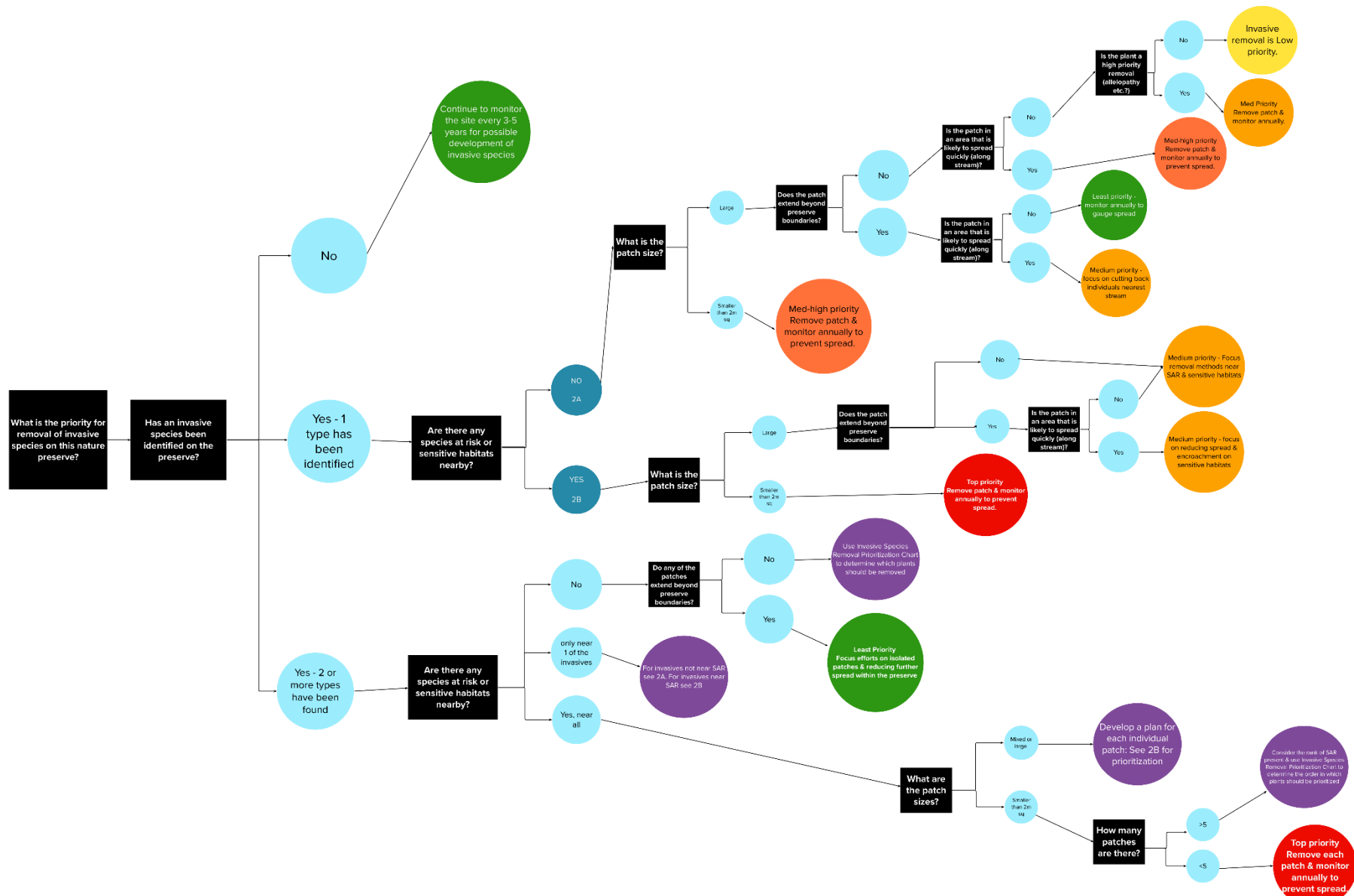
- Garlic mustard
- Glossy buckthorn (small)
- Common reed (small), Japanese barberry (small), Japanese knotweed (small), Purple loosestrife (small)
- Common reed (large), Japanese knotweed (large), woodland angelica (small)
- Glossy buckthorn (large), Japanese barberry (large), purple loosestrife (large)
- Lupines
- Woodland angelica (large)



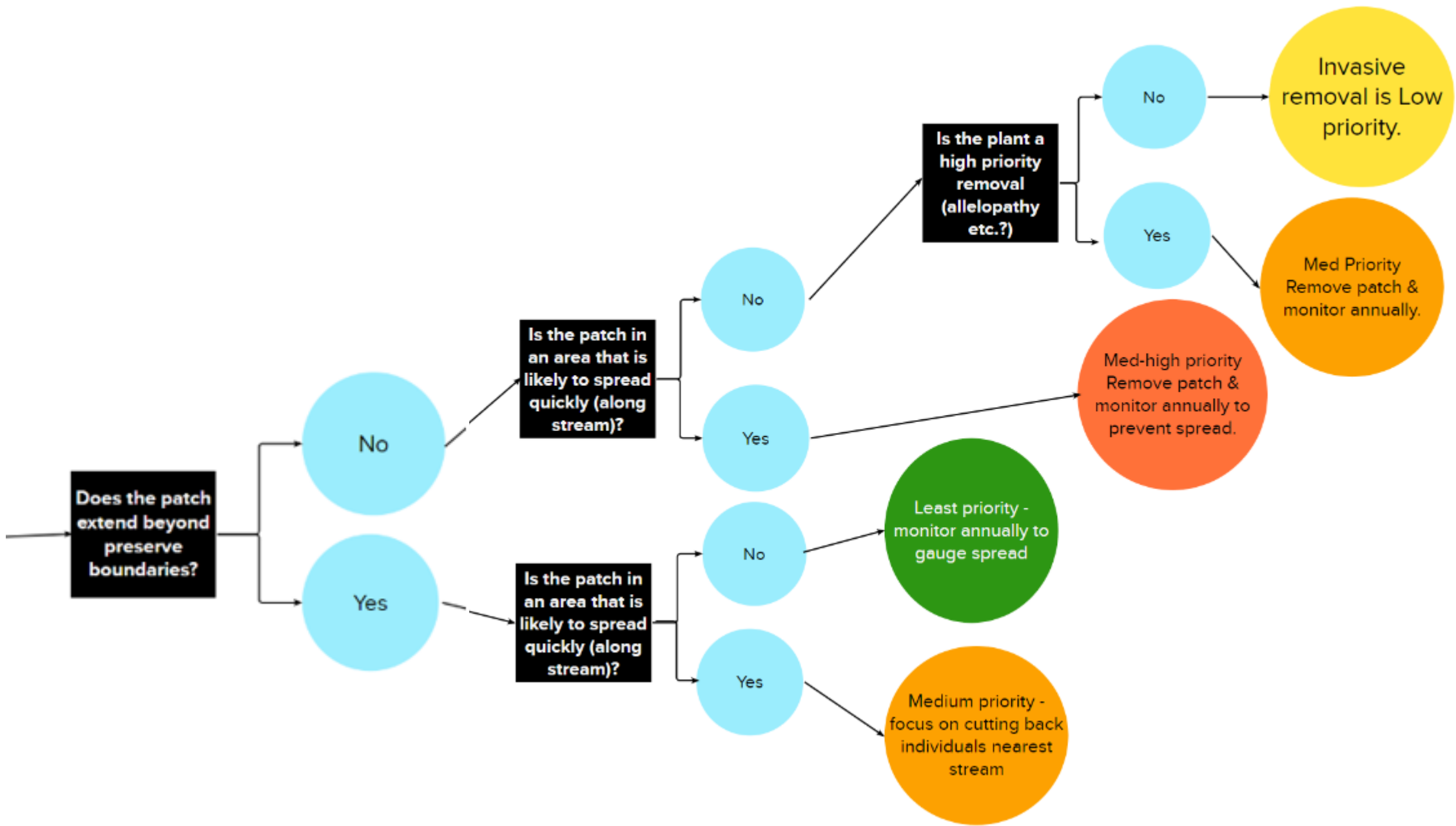
# Decision Tree for Invasive Removal Prioritization

**SYMBOLS**

Question	Yes	No	High priority	Low priority	Medium priority	Least priority	Top priority	Refer to Guide
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# VOLUNTEER EVENTS

- Each year we have over 12 volunteer events to remove invasive species
- Give information about how to remove the invasive species
- How the invasive species spreads
- Benefit of removing the species

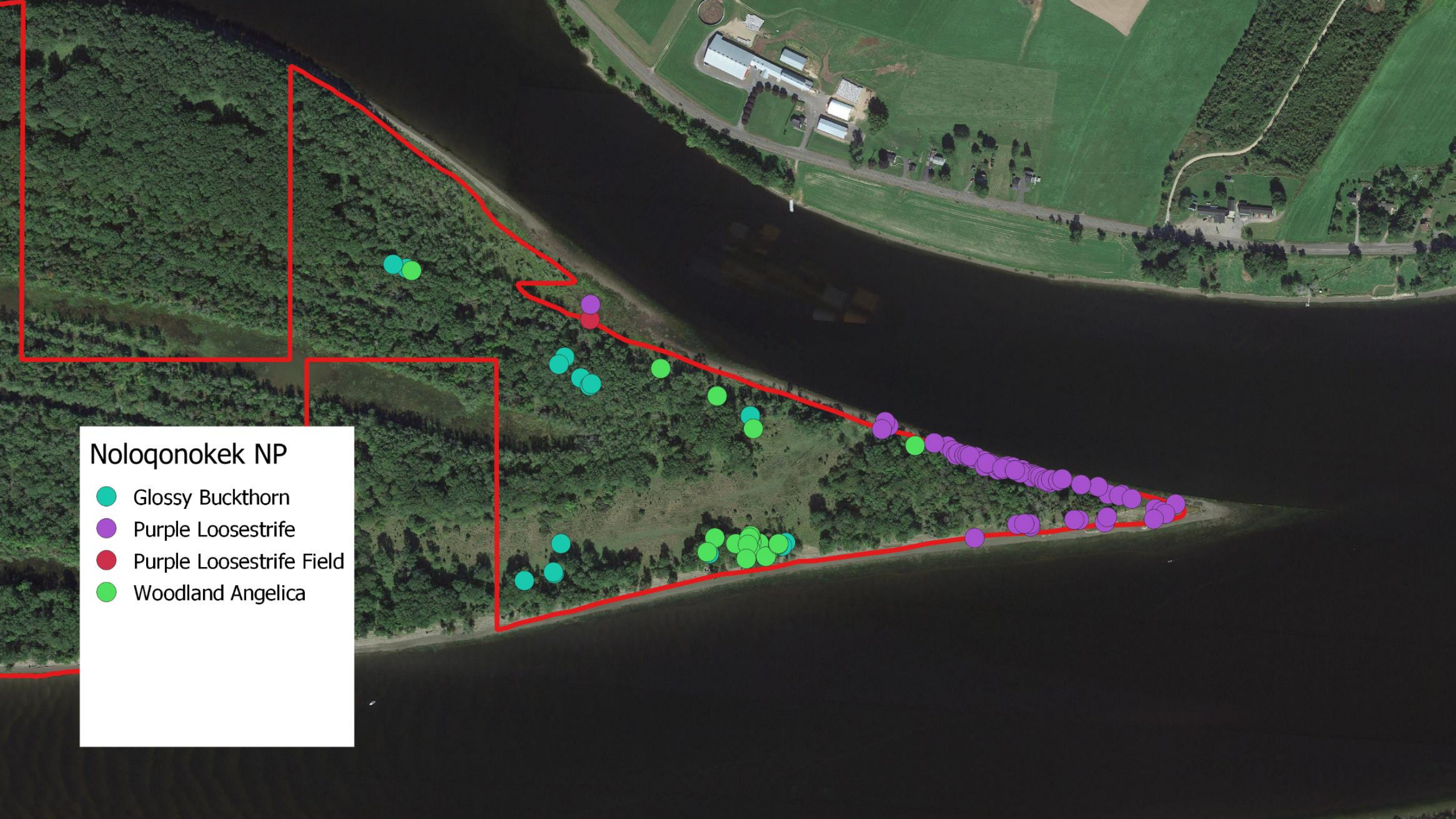






## Noloqonokek NP

-  Glossy Buckthorn
-  Purple Loosestrife
-  Purple Loosestrife Field
-  Woodland Angelica







# **Invasive Species NTNB Removes**



# Garlic Mustard (*Alliaria petiolata*)

(Forest, Roadside/Field, Seepages)

## Identification:

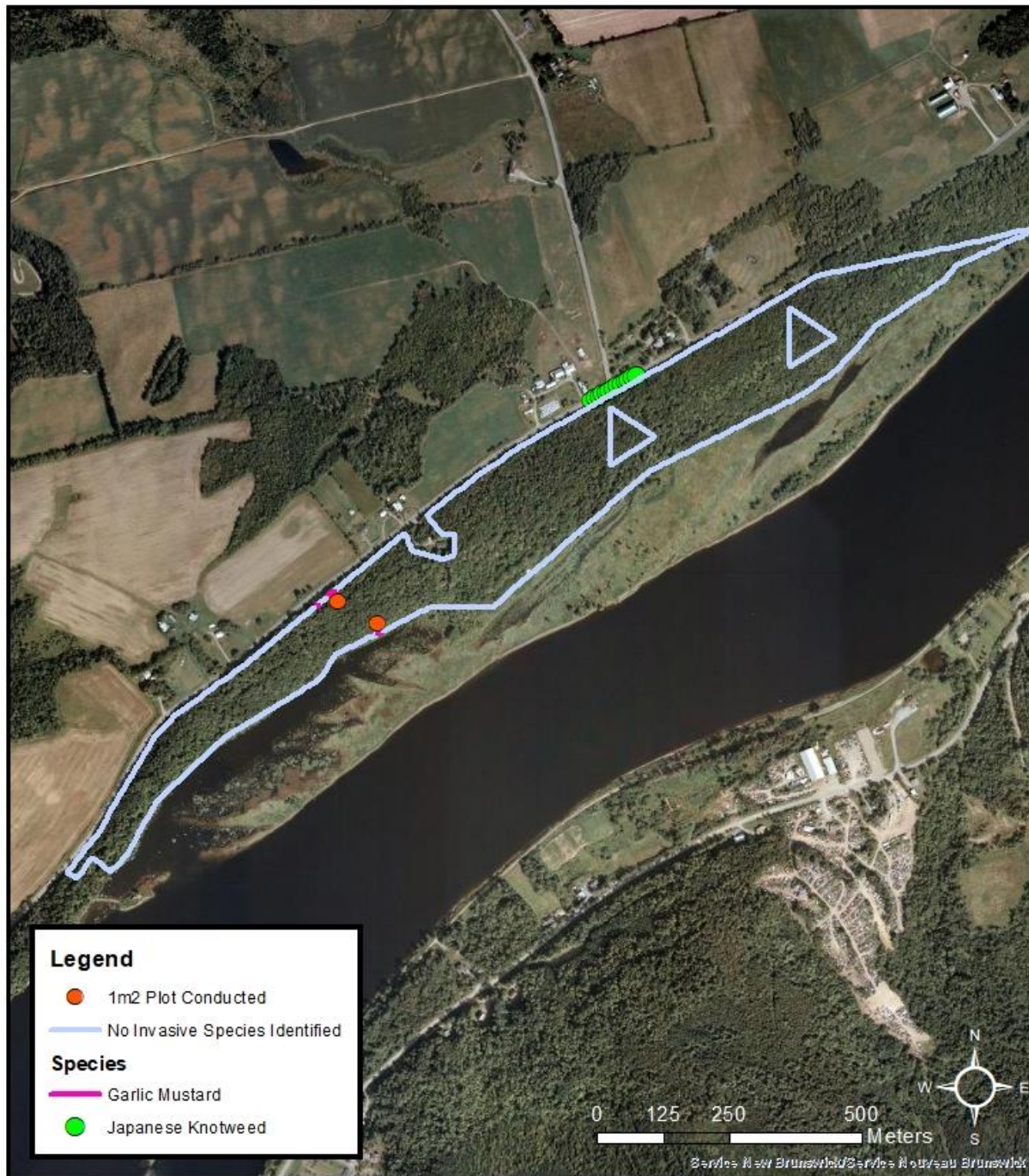
- 0.5-1 m tall
- lower/basal leaves kidney-shaped with scalloped edges
- triangular, alternate, sharply-toothed leaves
- White flowers with 4 petals
- Similar to many garlic, carrot, and daisy family except that Young leaves release a strong garlic odour



Info from Nature Conservancy of Canada slide



# Speer Hillside Nature Preserve





# Japanese knotweed (*Fallopia japonica*)

(Forest, Grasslands, Roadside/Field, Wetland)

## Identification:

- hollow bamboo-like stalks with red or pink striations
- spade-shaped leaves, arranged in a zigzag pattern
- forms very dense monocultures
- white flowers (Aug-Oct) with red stems





# JAPANESE KNOTWEED







Japanese knotweed

Butternut

Butternut

Japanese knotweed

Japanese knotweed

Japanese knotweed

Butternut

Japanese knotweed

Butternut







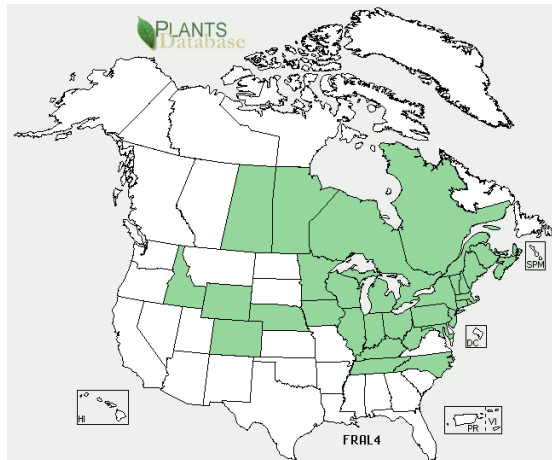
# Glossy Buckthorn (*Frangula alnus*) (forest, wetland)

## Identification:

- Small tree/shrub up to 6 meters
- flowers green/brown in spring
- leaves usually alternate, simple, glossy
- trunk dark and spotted with light flecks
- berries start red and turn black
- grows primarily in open wet woods
- layer under bark is bright orange



Adapted from Nature Conservancy of Canada slide



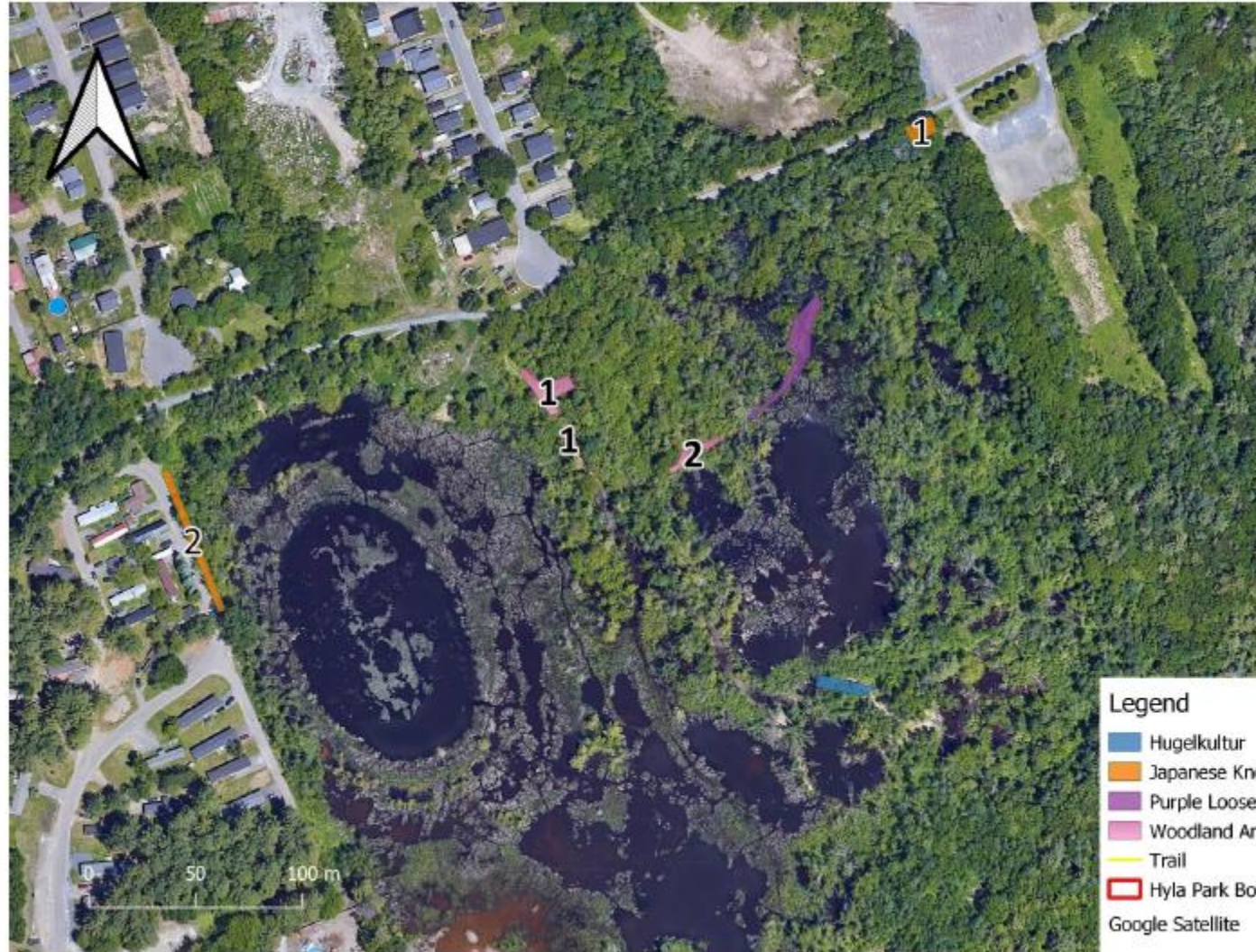


# Hyla Park - GLOSSY BUCKTHORN





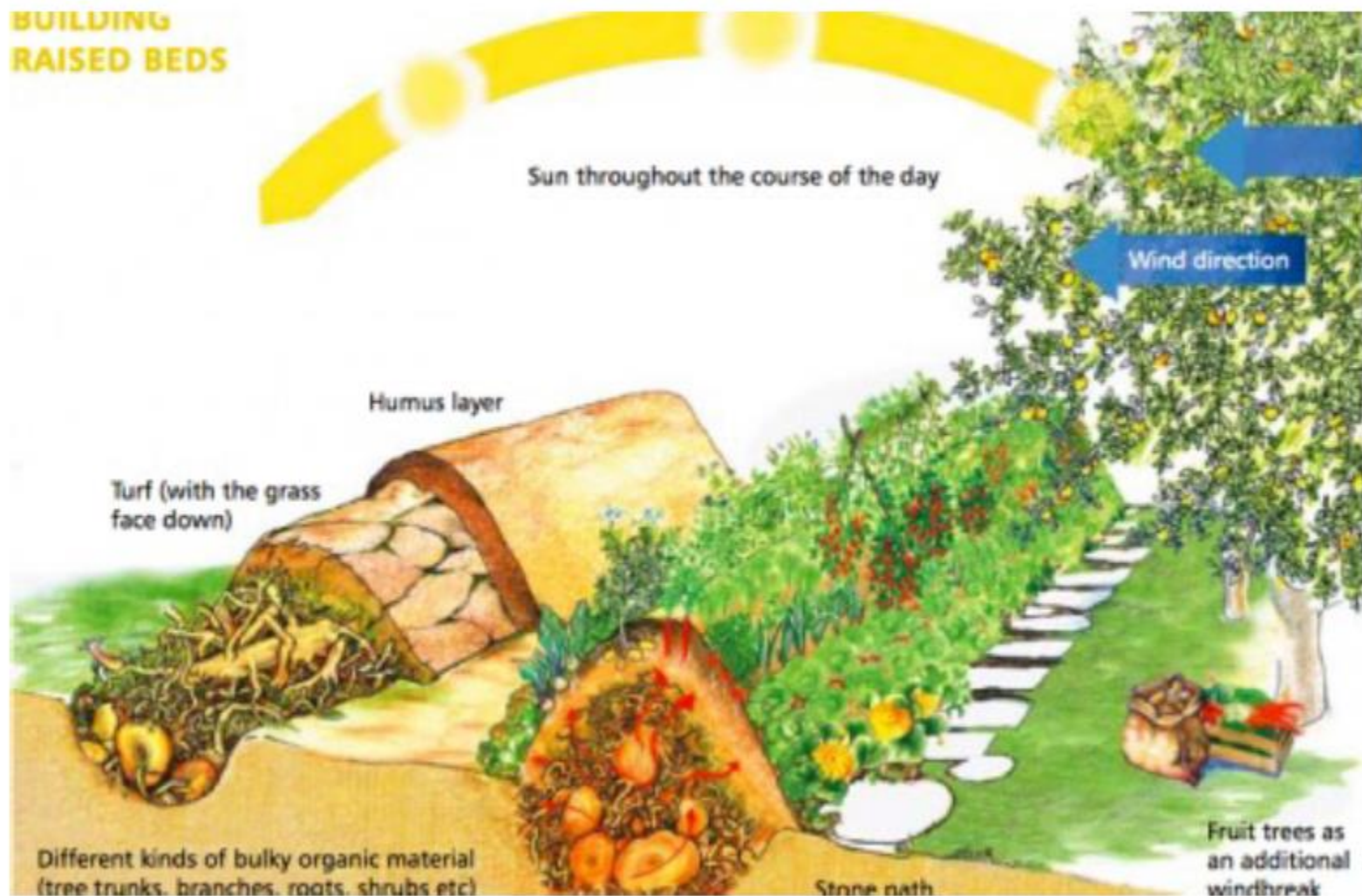
# Hyla Park





# HUGELKULTUR

## BUILDING RAISED BEDS









# Japanese barberry (*Berberis thunbergii*)

(forest, roadside, field, grasslands)

## Identification:

- Shrubs 1 m tall
- Smooth, ovate leaves, clustering in tight bunches close to the end of the branch.
- Yellow flowers that bloom in May
- Bright red berries that remain through winter





# JAPANESE BARBERRY – Thomas B. Munro Nature Preserve





# Woodland Angelica (*Angelica sylvestris*)

(Forest, Roadside, disturbed areas, seepages)

## Identification:

- Woody, hollow stems, can be purple
- 0.8 to 2 meters tall
- lower/basal leaves petiolate, long petioles, blade broadly triangular-ovate
- Compound leaves made of smaller leaflets
- Flower heads round and much smaller than Giant Hogweed.



Adapted from Nature Conservancy of Canada slide



# WOODLAND ANGELICA – Blueberry Hill Nature Preserve







**Solarization boxes**



# Extras

- Know what might be coming! Canadian Food Inspection Agency, Invasive mapping softwares - iMapInvasives
- Plant bare root trees when possible, and know where your soil or compost comes from to avoid spreading invasives





**Bethany Pohl**  
Stewardship Manager  
Bethany.pohl@ntnb.org



**THANK YOU!**  
**QUESTIONS?**

