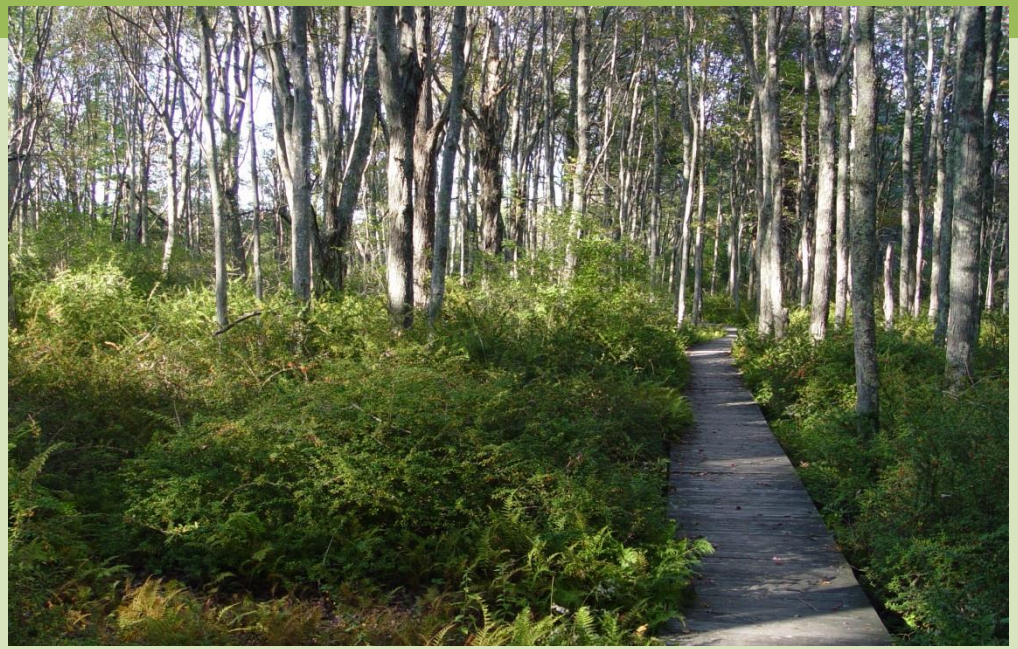
Invasive plants in Maine's forests



Japanese barberry, Wells

Shrubby honeysuckle, Windsor

Nancy Olmstead, Invasive Plant Biologist
Maine Natural Areas Program

NERCOFE 2016 Workshop

March 14, 2016

Maine Natural Areas Program (MNAP)

Our mission – to ensure the maintenance of Maine's natural heritage for the benefit of present and future generations.

- Keep track of natural resources
- Facilitate informed decision-making
- Invasive plant initiatives

All photos courtesy of MNAP unless otherwise noted.

What is an invasive species?

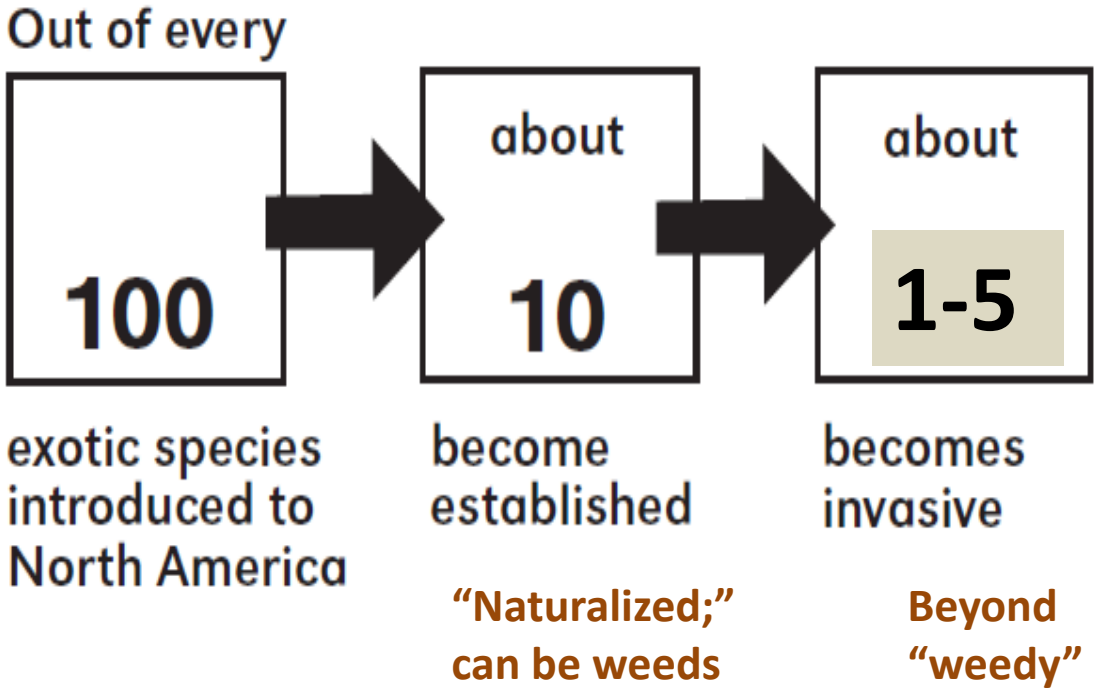
A non-native species whose introduction does cause, or is likely to cause, economic or environmental harm or harm to human health, and which can establish and spread in minimally managed habitats.

Japanese knotweed (aka bamboo) and burning bush (aka winged euonymus)

Most non-native species are not invasive

FIGURE 1.1

Number of Exotic Species That Become Invasive



How do invasive plants get here?

~50-60% brought for horticulture

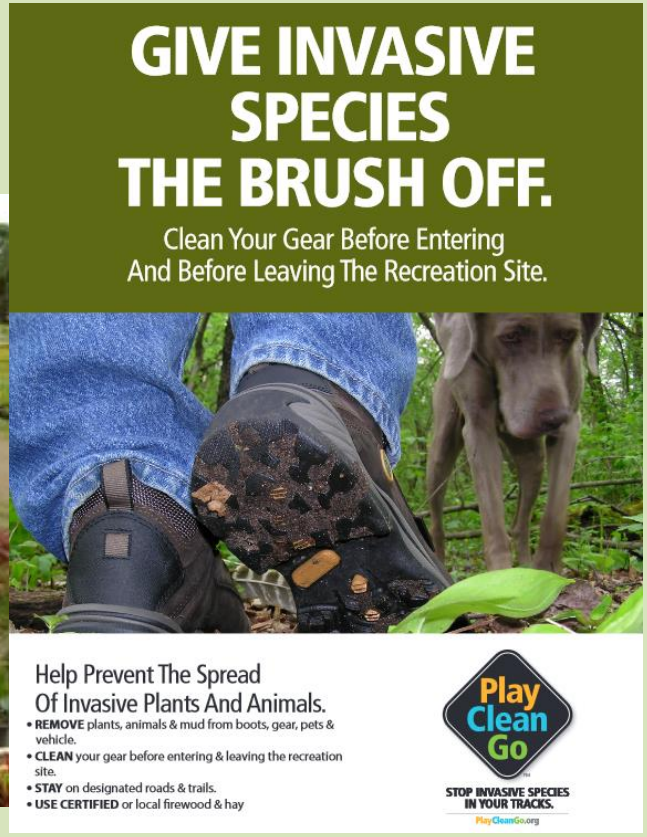
~30% brought for "conservation"

~10% accidental

#s from Marinelli and Randall 1996, Invasive Plants: Weeds of the Global Garden, P.5-6, and New England Wildflower Society

How do they spread?

Seeds or fragments



Why are they so successful?

- Thrive on disturbance
- Competitive advantages:
  - Not usually eaten
  - Early leaf out
  - Prodigious reproduction

What harm do invasive plants do?

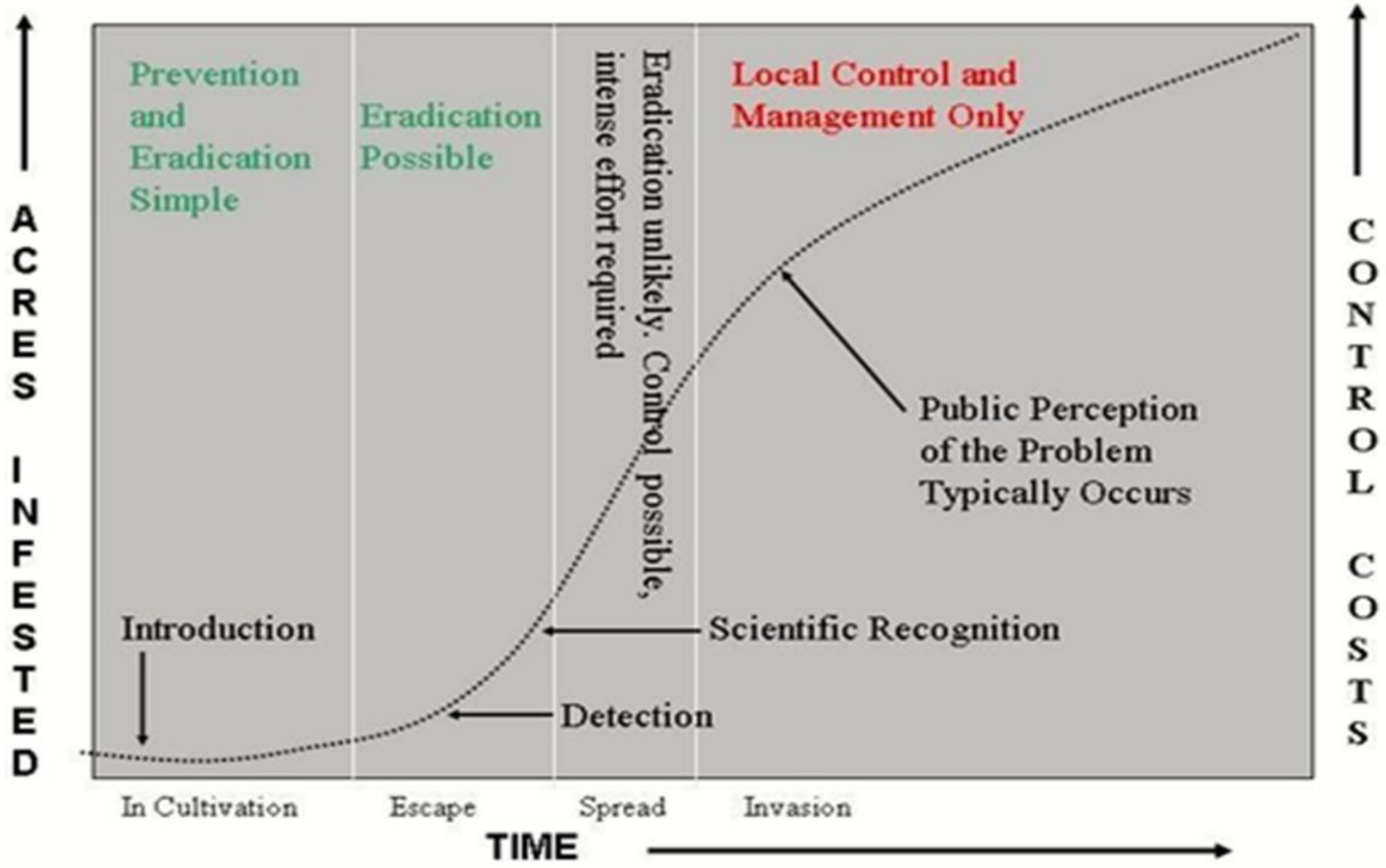
Second harm to herbivores and on up the-food web

Out-compete native plant species, overrun habitats

Compete with native tree regeneration

Damage or kill plants directly or indirectly

Highest priority: early detection and control



How the invasive game usually plays out (Graphic: Tom Rawinski, USFS)

Key steps in addressing invasive plants

- Prevent new introductions
- Identify and assess
- Prioritize
- Control
- Monitor

Additional need in forest management: comply with FSC/SFI Standards

Key steps in addressing invasive plants

- **Prevent new introductions**
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Most important opportunities to keep Maine's forests clean!

Additional need in forest management: comply with FSC/SFI Standards

SUSTAINABLE FORESTRY INITIATIVE
Good for you. Good for our forests.℠

FSC Forest Stewardship Council

Preventing introductions in the forest

Clean equipment

Monitor sites with fill, seed mix, etc.

Preventing introductions in the forest

Plant native species

Clean yourself and pets

Learn to identify 10+ important invasive plants

1. Japanese barberry
2. Shrubby honeysuckles
3. Asiatic bittersweet
4. Common buckthorn
5. Glossy buckthorn
6. Autumn olive
7. Multiflora rose

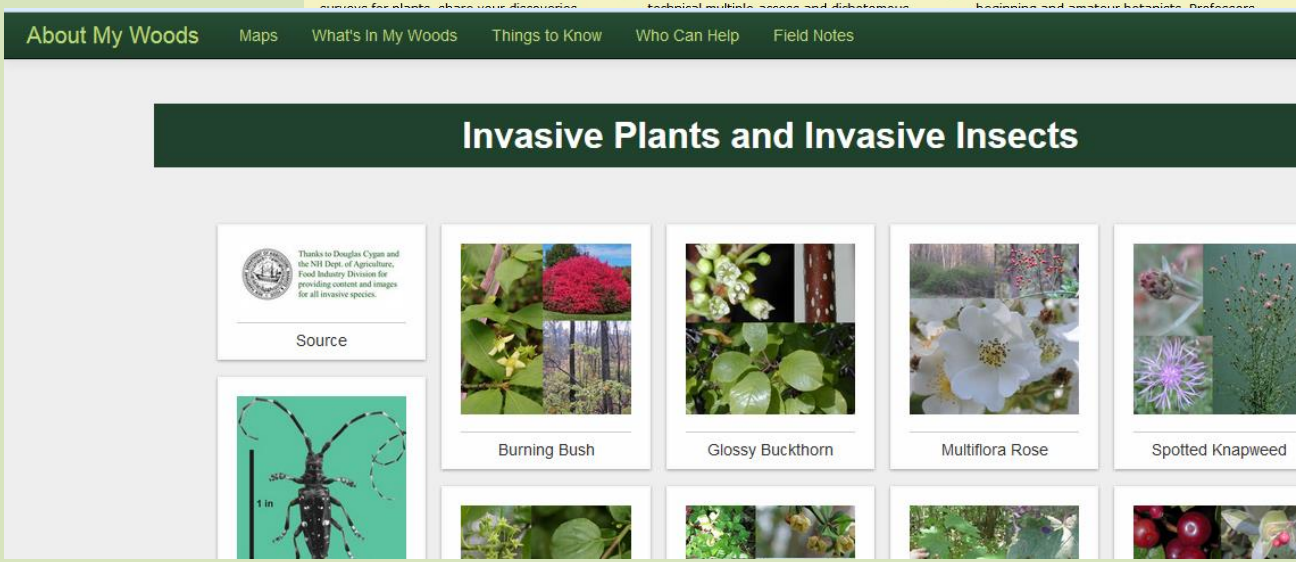
8. Norway maple
9. Burning bush
10. Garlic mustard

[Japanese knotweed]

[Common reed, aka *Phragmites*]

Websites for invasive plant identification

- Maine Natural Areas Program - factsheets
- GoBotany
- About My Woods, What's in My Woods section (also an App)



Key steps in addressing invasive plants

- **Prevent new introductions**
- **Identify and assess**
- **Prioritize**
- **Control**
- **Monitor**
- ***Act early and often***

iMapInvasives online mapping tool can help

<u>Assess the site:</u>

Mapping to figure out: *what, where, how much*?

<u>Assess landscape:</u>

What plants already infest the surrounding area?

Practical field survey methods

Can't inventory every acre. Focus on:

A) ***likely*** or ***valuable*** areas:

1. Along trails, roads, landings
2. Valuable habitats/stands
3. Edges, old cellar holes,

other areas already known to have invasive plants

B) and/or ***areas soon to be harvested***
(do during timber cruise/inventory?)

Key steps in addressing invasive plants

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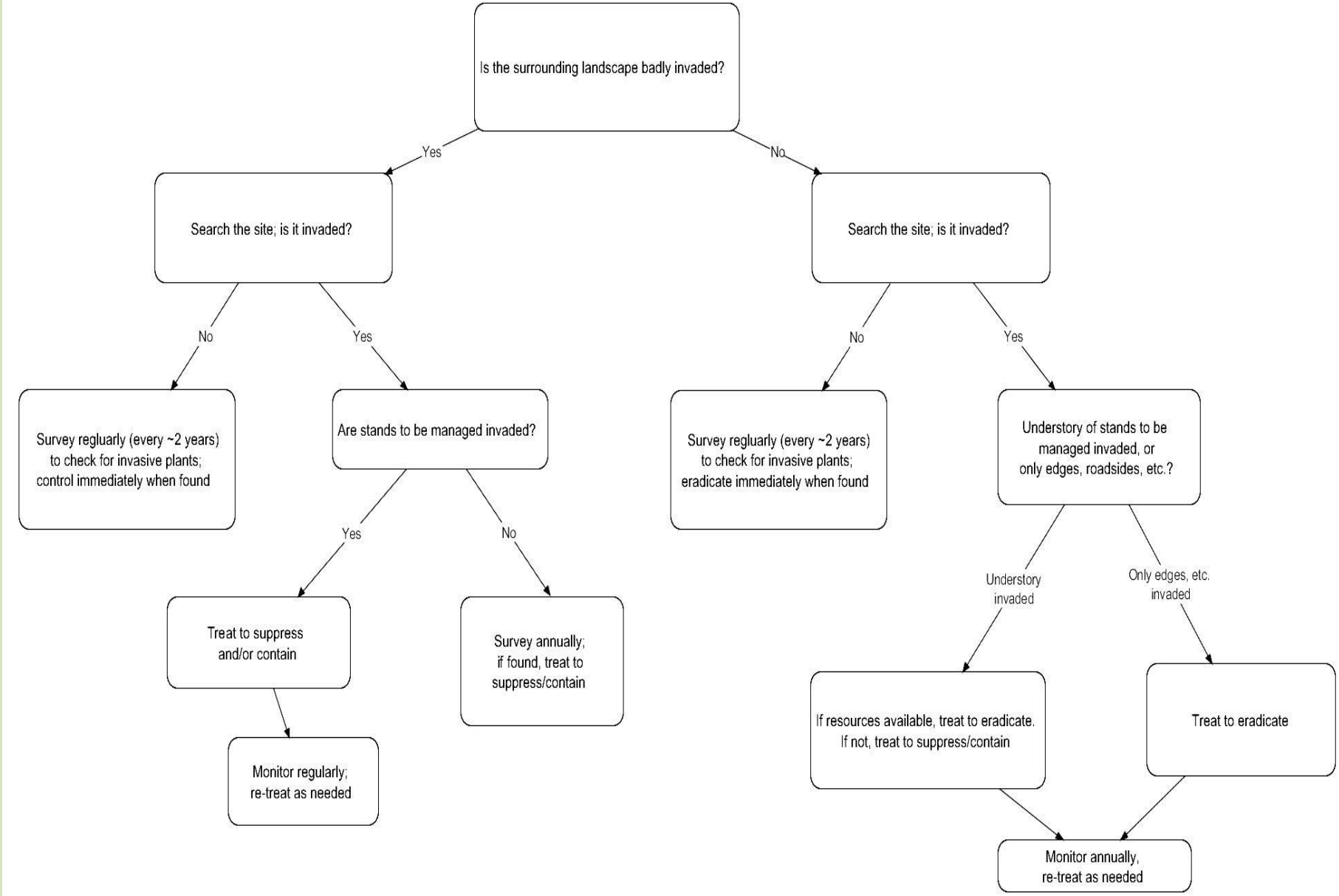
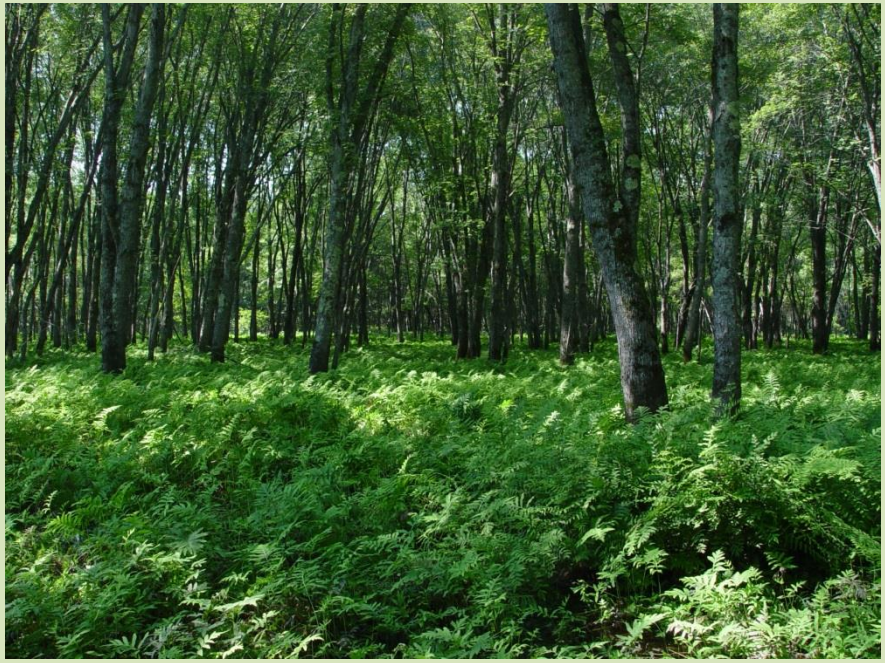
Discussion Tree for prioritization



Set realistic goals, make a plan



<u>Prioritize:</u>

Best timber stands

Eradication of new/early detection species

Eradication of isolated populations

<u>Next priority:</u>

Suppress bad infestations

Contain larger patches

Key steps in addressing invasive plants

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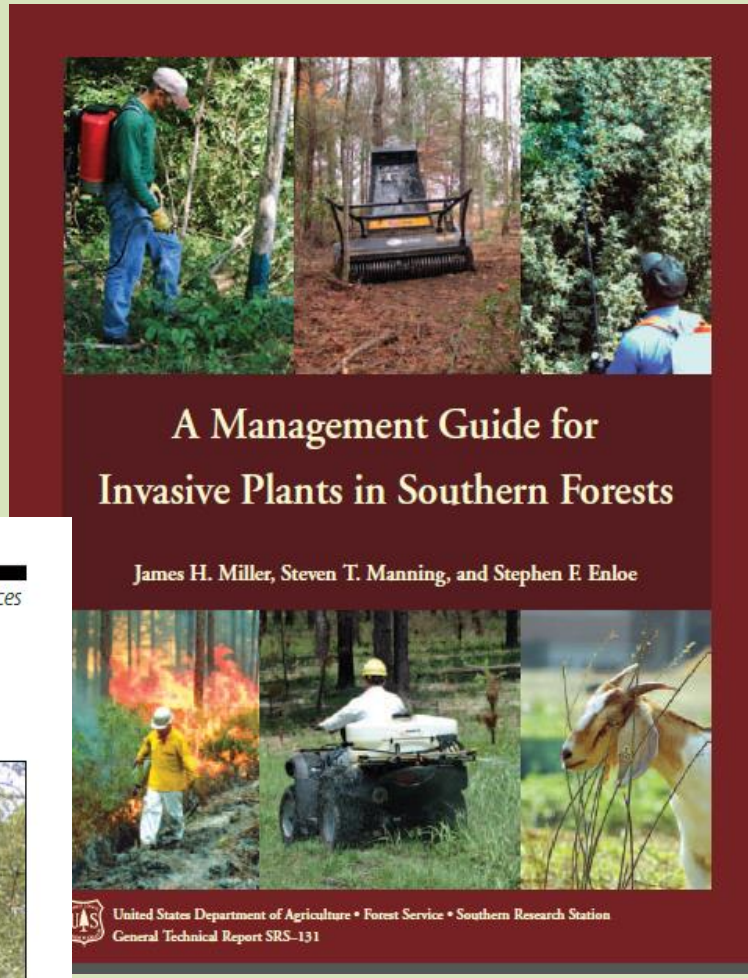
Species-specific Best Control Practices
(what herbicide do I use, when, concentration, etc.)

- **UMaine Ext. fact sheets** – a start
- **Michigan DNR -** Invasive Species Best Control Practices
- **US Forest Service -** *A Management Guide for Invasive Plants in Southern Forests*




Invasive Species—Best Control Practices

Michigan Department of Natural Resources
Michigan Natural Features Inventory
2/2012

Autumn olive

Elaeagnus umbellata

Autumn olive is native to Asia and was introduced into the US in the 1830s. It was commonly planted for wildlife food and cover until its invasive traits became apparent. It produces abundant fruits that are widely distributed by birds and mammals. Like many non-native shrubs, it leafs out early and retains its leaves late in fall, shading out desirable native species and reducing species diversity. It is able to germinate and survive in shade as well as sun.

Autumn olive has root nodules that fix atmospheric nitrogen. As a result, it has the potential to degrade native plant communities that are adapted to low nutrient levels such as barrens and prairies. The resulting increase in nitrogen

Good Forestry in the Granite State Chapter on Invasive Plants

Good Forestry in the Granite State:
Recommended Voluntary Forest Management Practices for New Hampshire

Table of Contents >> 5.1 Insects and Diseases << 5.2 Invasive Plants >> 5.3 Ice and Wind Damage

5.2 INVASIVE PLANTS

BACKGROUND

Invasive plants can pose a threat to forest ecosystems and forest productivity. Foresters, landowners, and loggers can play important roles in slowing the spread of invasive species.

Invasive plants are non-native species that invade natural communities and develop self-sustaining populations. The start of many infestations is often tied to a disturbance, and once established, the invasive species spread into undisturbed landscapes. They out-compete native species, disrupting ecological processes, and cause a loss of economic value or output. The economic impacts, sometimes hard to discern directly, often result from the environmental impacts.

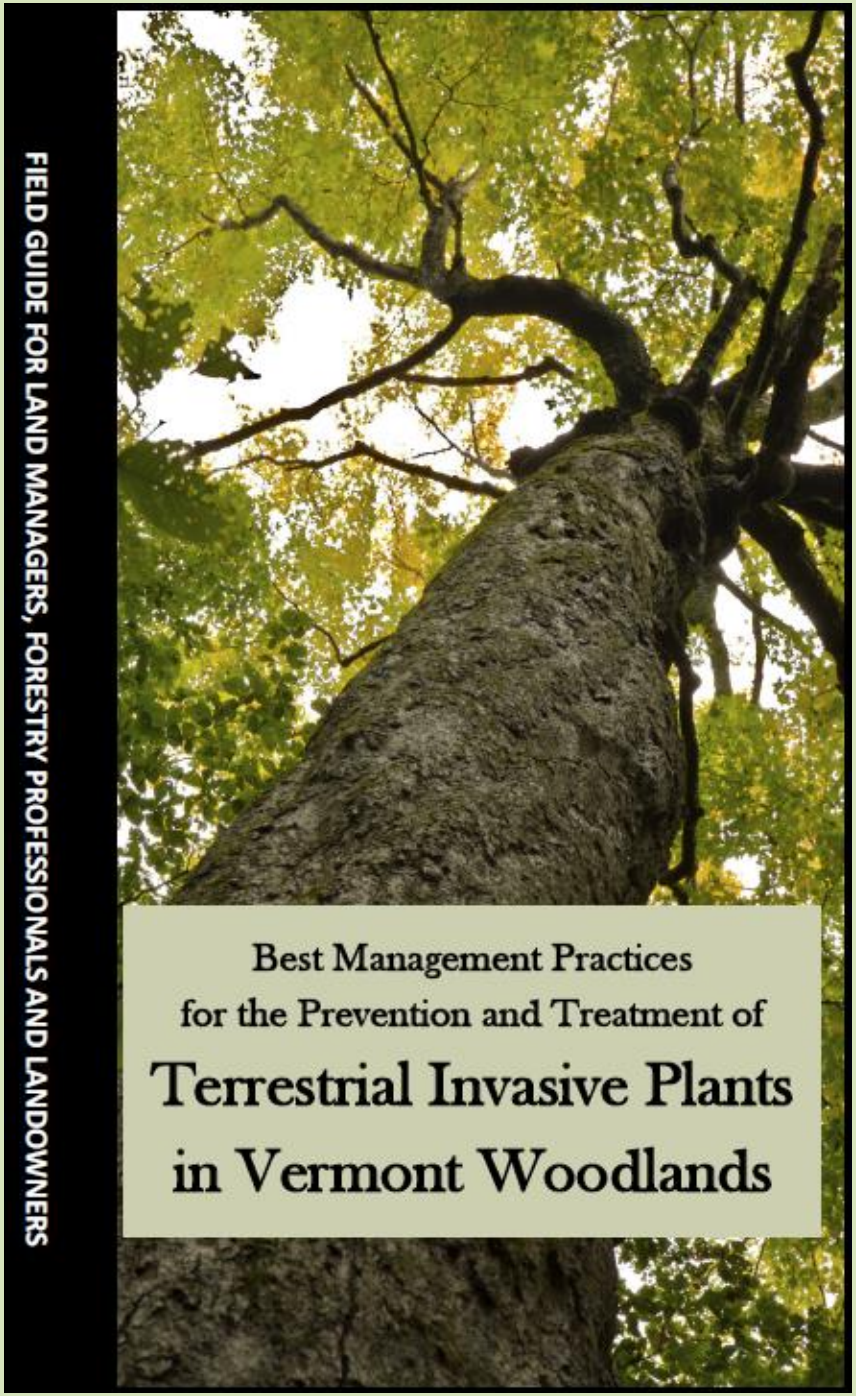
The N.H. Invasive Species Law (RSA 430:52 and N.H. Administrative Rules AGR 3800) defines an invasive species as "an alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health." These species come in a variety of forms, including trees, vines, shrubs, grasses, terrestrial herbaceous and aquatic.

Table 3800.1 New Hampshire Prohibited Invasive Species List from N.H. Administrative Rules AGR 3800

Scientific Name	Common Name
Acer platanoides	Norway maple
Ailanthus altissima	tree of heaven
Alliaria petiolata	garlic mustard

http://extension.unh.edu/goodforestry/

VT



http://www.vtinvasives.org/plants/prevention-and-management/forestry-best-management-practices

BMPs for Invasive plant control

- Determine whether control is practical/feasible
- Before, during, or after harvest?

  (Usually, BEFORE)
- Select appropriate treatment
- Plan for >1 year of control, >1 treatment
- Monitor and follow up

BMPs for Harvest planning and contracts

- Pre-operation survey for invasives – or incorporate into regular timber inventory
- Map invasive plant locations
- Avoid putting roads/landings in infested areas
- Require clean equipment coming to and leaving from the site
- Use invasive-free materials
- Work from uninfested towards infested areas

BMPs during operations

- Avoid moving equipment from infested to uninfested areas
- Operate in invasive-free areas *first*; operate from least infested to more infested
- Locate trails, roads, and landings in clean areas
- Limit soil disturbance to that needed to achieve silvicultural objectives

BMPs during close-out and after

- Use seed mixes free of non-natives
- Monitor sites where fill, seed, or mulch was used, and major roads and landings
- Monitor harvest area for 3-5 years
- Additional treatments as needed to release regeneration!

iMapInvasives can help

Centralized repository for reporting new species

Site assessment:
what, where, how much?

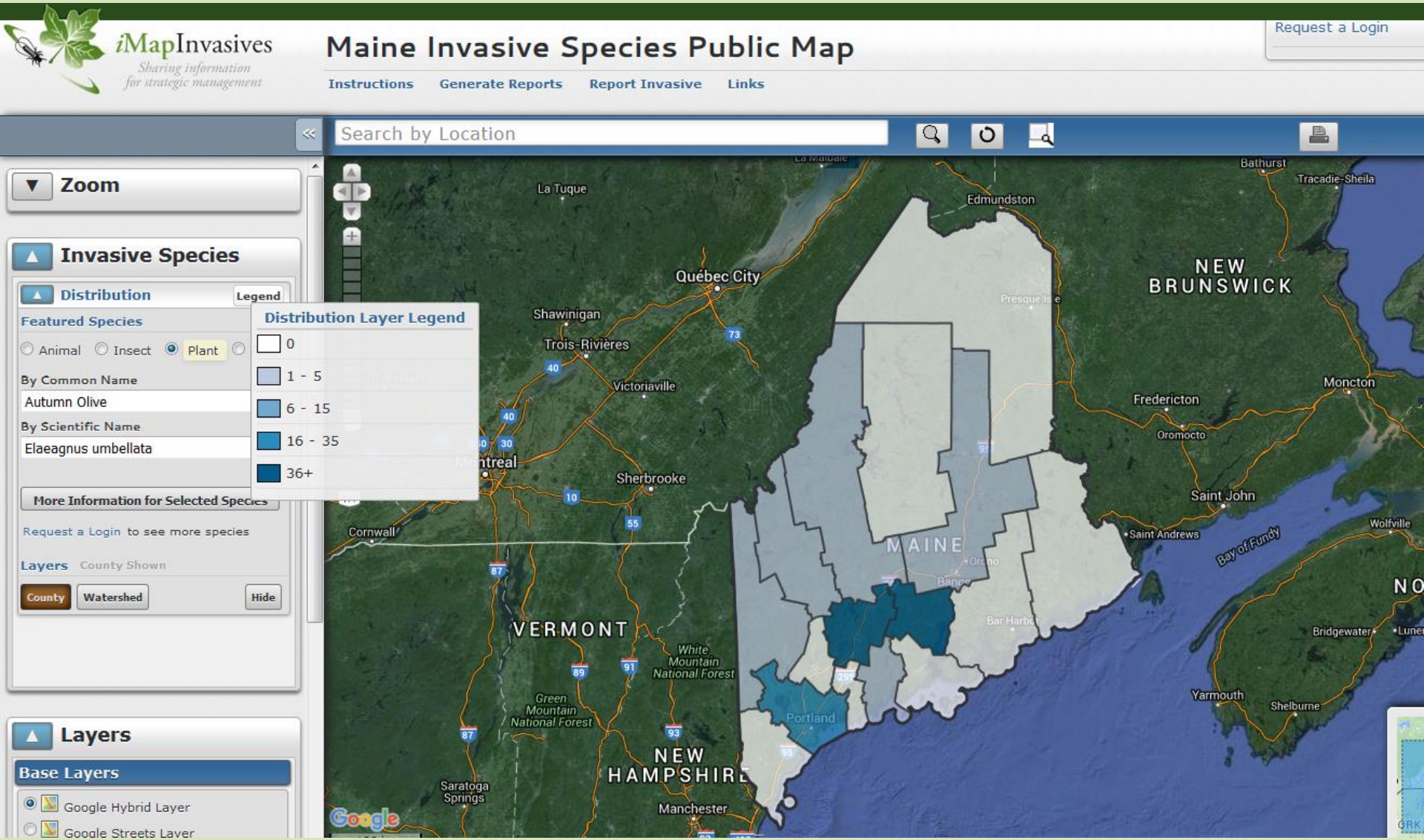
Landscape context:

What plants already infest your area?

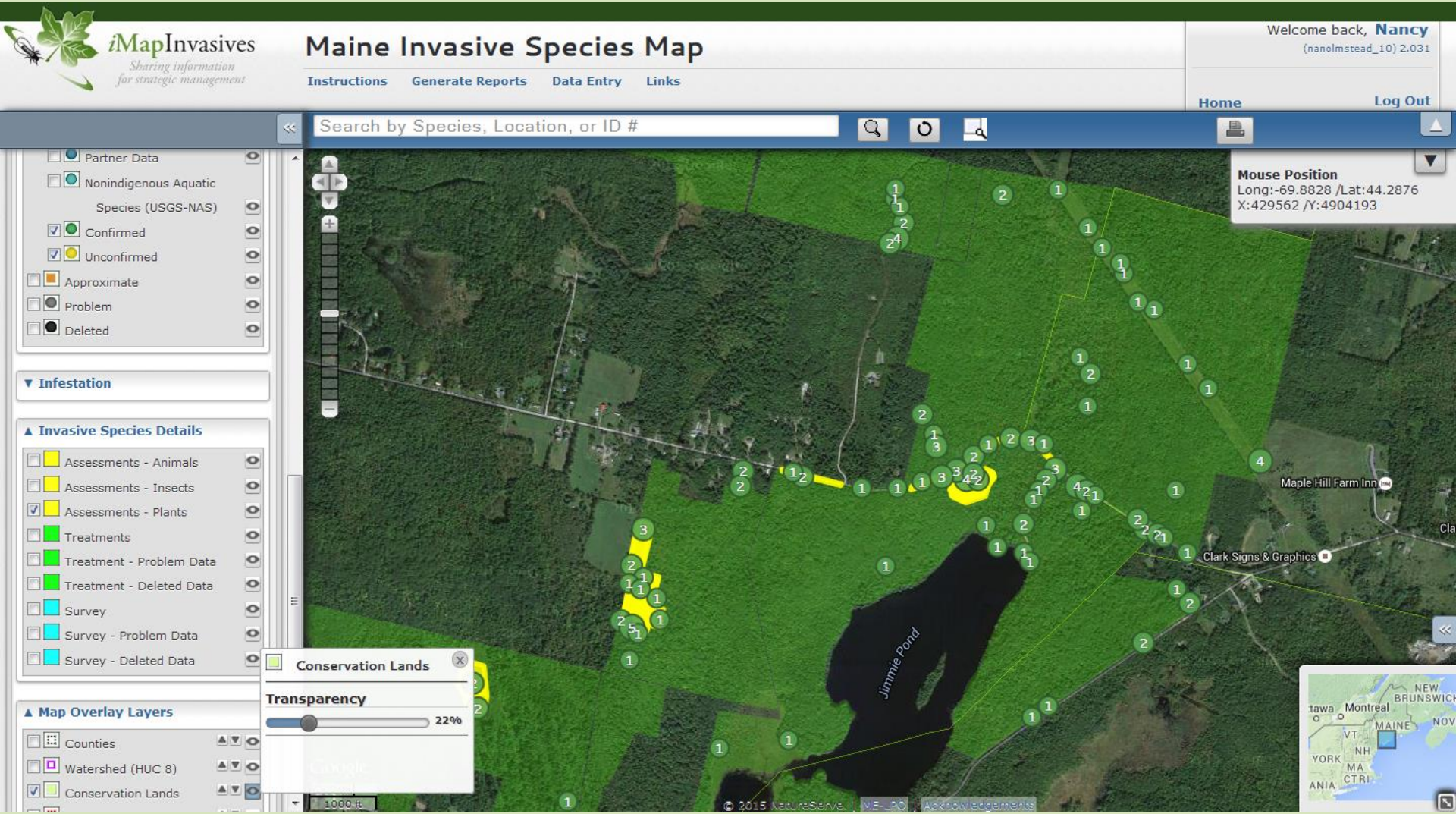
Record and monitor Treatments

Google "Maine iMapInvasives" to request an account

iMapInvasives map – by county



iMapInvasives map – site scale



THANK YOU! …. QUESTIONS?

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287-8046

Maine Department of Agriculture, Conservation and Forestry

Those 10+ species