

# 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.

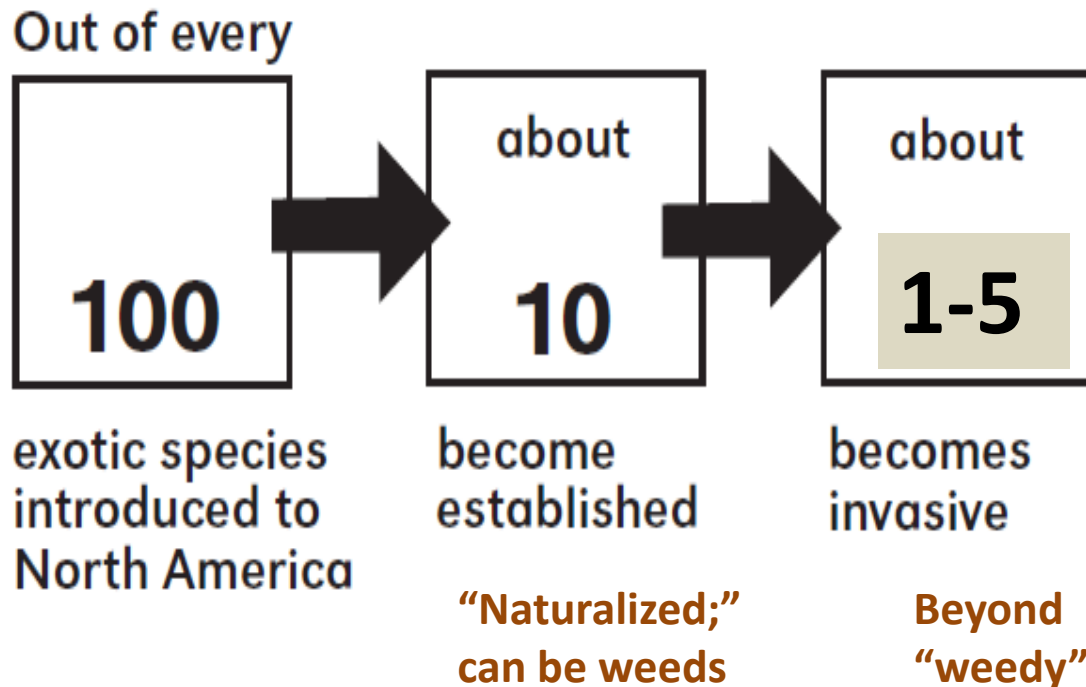


Japanese knotweed (aka bamboo) and burning bush (aka winged euonymus)

# 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



# How do they spread?

Seeds or fragments



## GIVE INVASIVE SPECIES THE BRUSH OFF.

Clean Your Gear Before Entering And Before Leaving The Recreation Site.



Help Prevent The Spread Of Invasive Plants And Animals.

- REMOVE plants, animals & mud from boots, gear, pets & vehicle.
- CLEAN your gear before entering & leaving the recreation site.
- STAY on designated roads & trails.
- USE CERTIFIED or local firewood & hay



STOP INVASIVE SPECIES IN YOUR TRACKS.  
PlayCleanGo.org

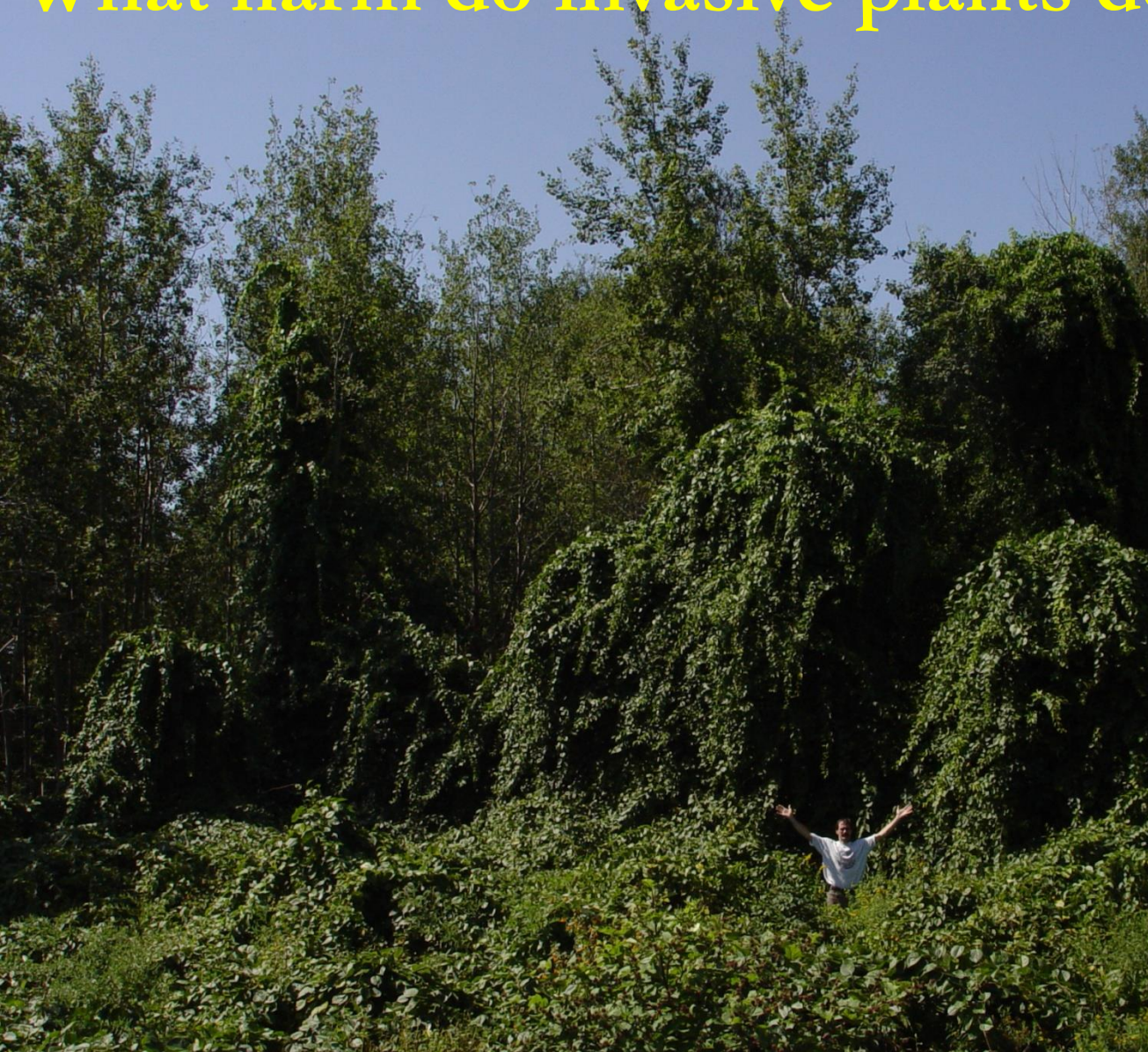


# Why are they so successful?

- 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**



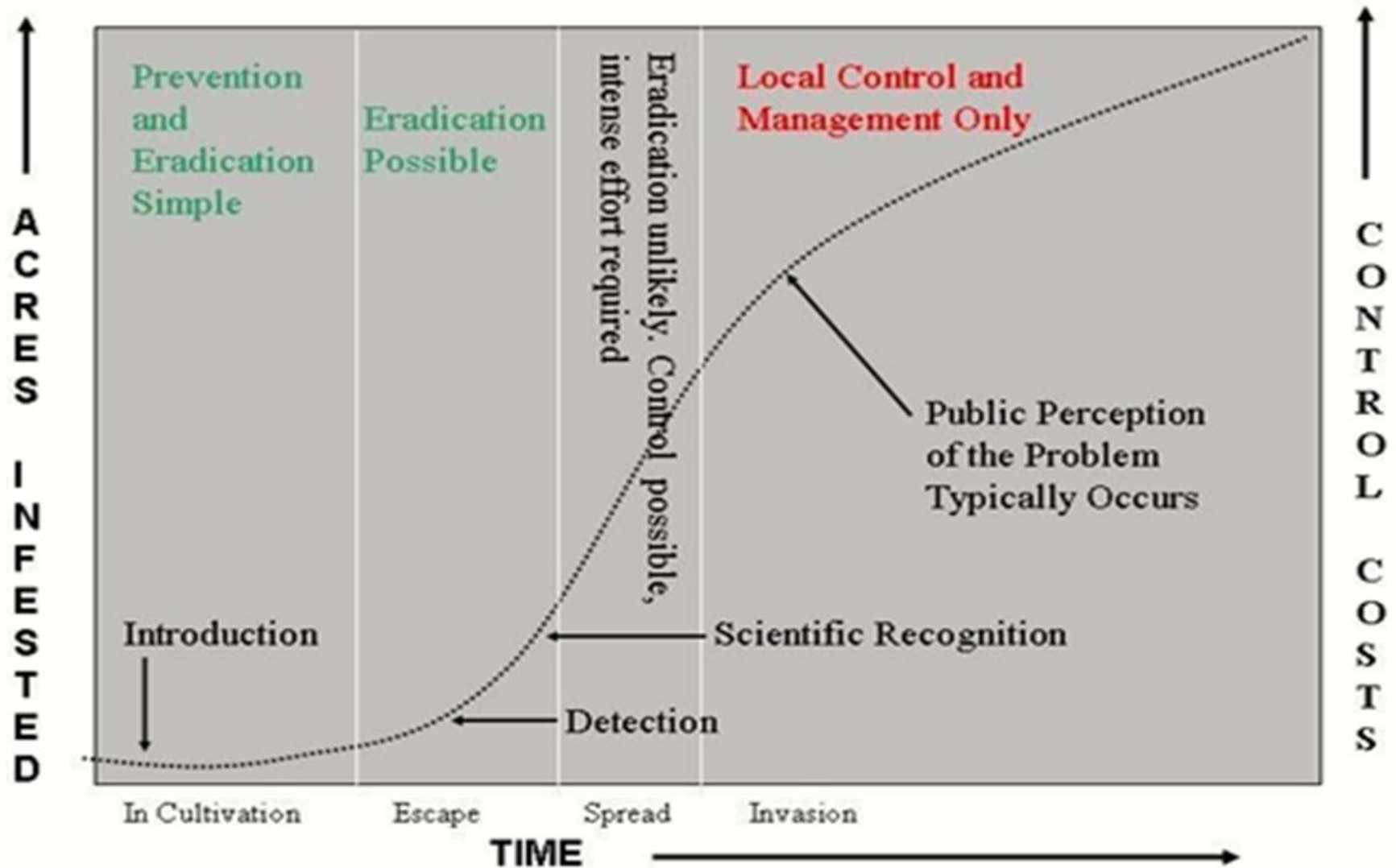
# Compete with native tree regeneration



# 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**
- **Identify** and assess
- **Prioritize**
- **Control**
- **Monitor**

**Most important opportunities to keep Maine's forests clean!**

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



# Preventing introductions in the forest



Clean equipment



Monitor sites with fill, seed mix, etc.



# Preventing introductions in the forest



Plant native species

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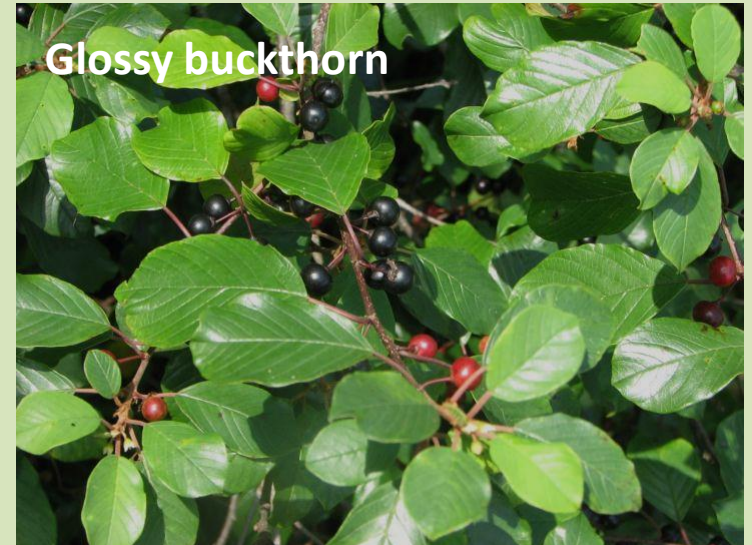
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**Play Clean Go**  
STOP INVASIVE SPECIES IN YOUR TRACKS.  
[PlayCleanGo.org](http://PlayCleanGo.org)

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*]



Glossy buckthorn



Shrubby honeysuckle



# 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



**iMapInvasives**

*Sharing information for strategic management*

[www.imapinvasives.org/meimi](http://www.imapinvasives.org/meimi)

Assess the site:

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

Assess landscape:

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

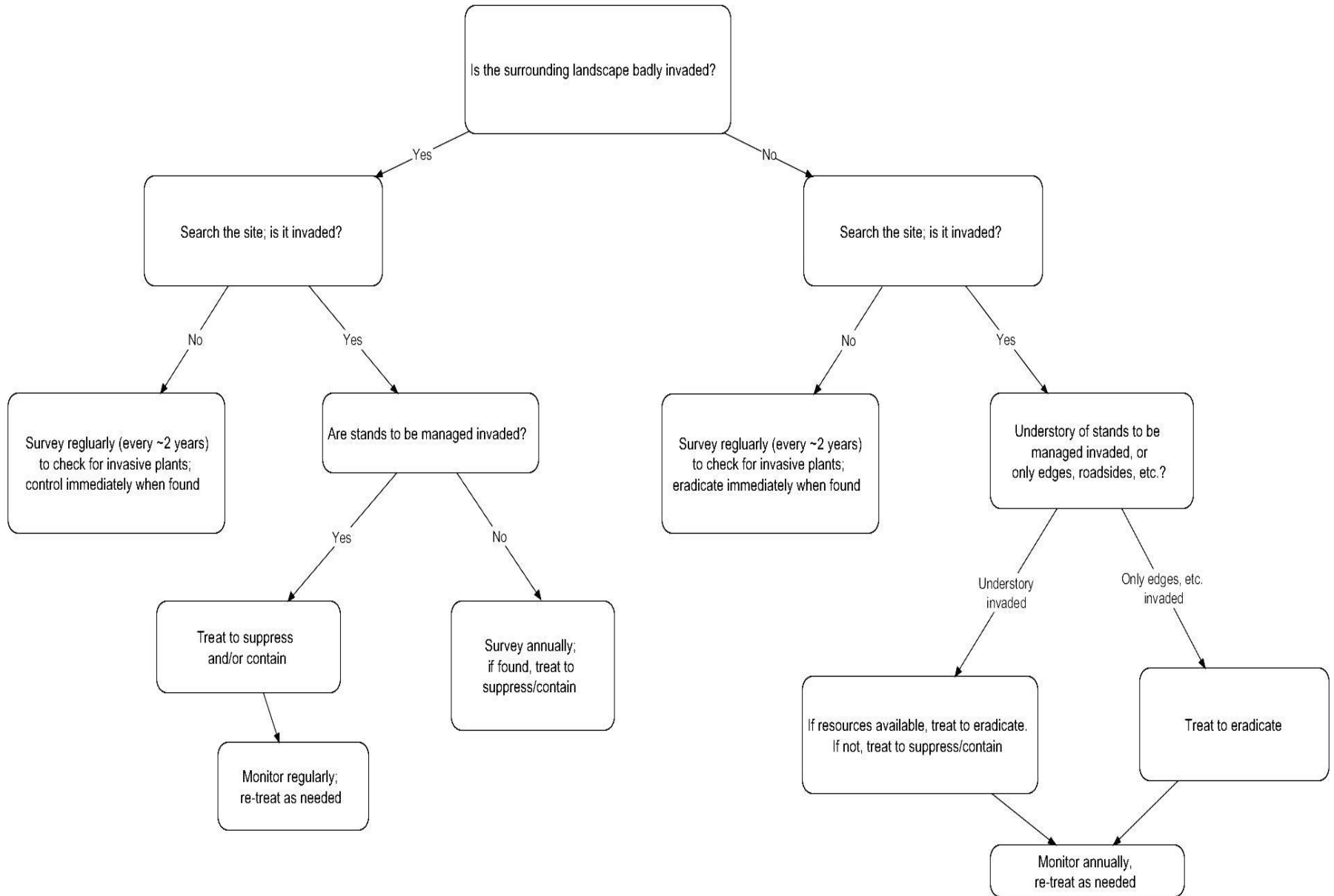
B) and/or *areas soon to be harvested*  
(do during timber cruise/inventory?)



# Key steps in addressing invasive plants

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

# Discussion Tree for prioritization



# Set realistic goals, make a plan

## Prioritize:

Best timber stands

Eradication of new/early  
detection species

Eradication of isolated  
populations



## Next priority:

Suppress bad infestations

Contain larger patches

# Key steps in addressing invasive plants

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



# 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***



## A Management Guide for Invasive Plants in Southern Forests

James H. Miller, Steven T. Manning, and Stephen F. Enloe



United States Department of Agriculture • Forest Service • Southern Research Station  
General Technical Report SRS-131



### 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

[Home](#) | [About the guide](#) | [Allowed uses](#)

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## 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.

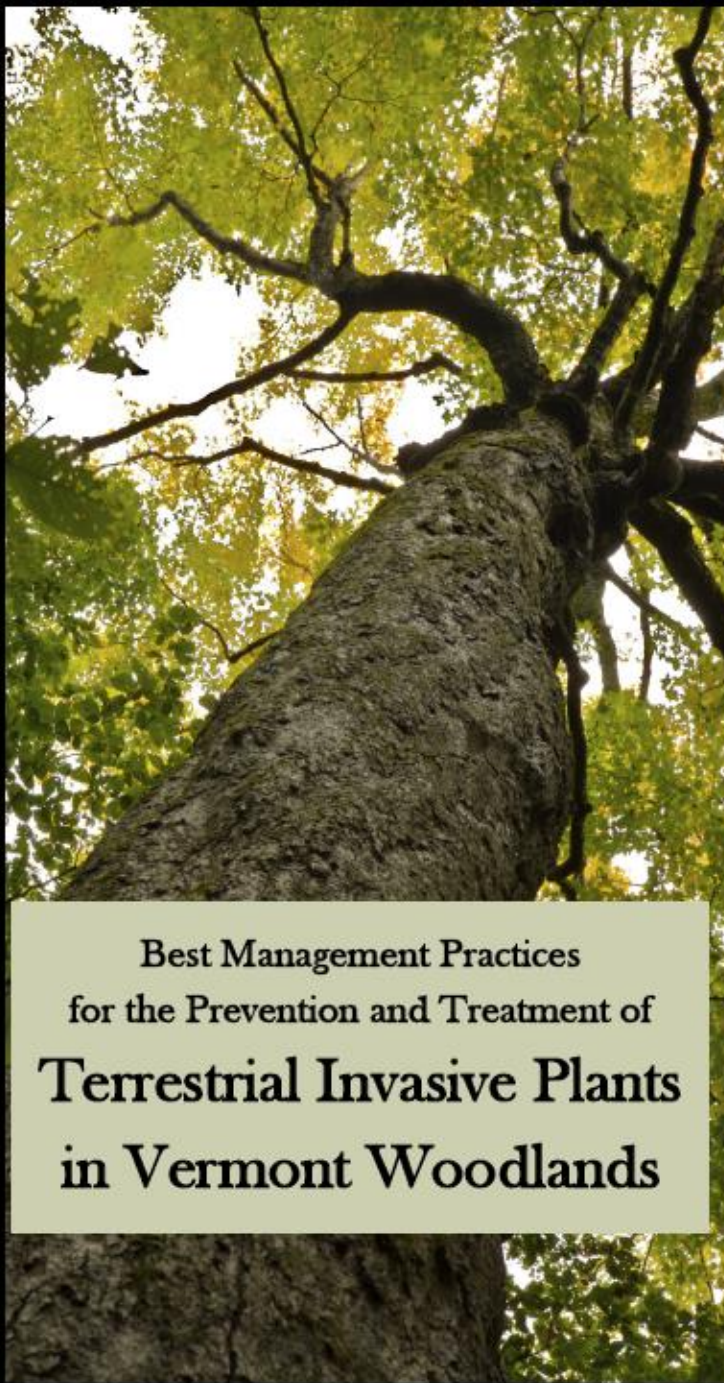
**Table 3800.1 New Hampshire Prohibited Invasive Species List from N.H. Administrative Rules AGR 3800**

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

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

VT

FIELD GUIDE FOR LAND MANAGERS, FORESTRY PROFESSIONALS AND LANDOWNERS



Best Management Practices  
for the Prevention and Treatment of  
**Terrestrial Invasive Plants**  
in Vermont Woodlands

<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



**iMapInvasives**

*Sharing information for strategic management*

[www.imapinvasives.org/meimi](http://www.imapinvasives.org/meimi)

***Google “Maine  
iMapInvasives”  
to request an  
account***

Centralized repository for reporting new species

Site assessment:

*what, where, how much?*

Landscape context:

What plants already infest your area?

Record and monitor

Treatments



# iMapInvasives map - by county



## Maine Invasive Species Public Map

[Request a Login](#)

[Instructions](#) [Generate Reports](#) [Report Invasive](#) [Links](#)

Search by Location

**Zoom**

**Invasive Species**

**Distribution** Legend

**Featured Species**

Animal  Insect  Plant

**By Common Name**

Autumn Olive

**By Scientific Name**

Elaeagnus umbellata

**More Information for Selected Species**

[Request a Login](#) to see more species

**Layers** County Shown

County  Watershed

**Layers**

**Base Layers**

Google Hybrid Layer  Google Streets Layer

**Distribution Layer Legend**

	0
	1 - 5
	6 - 15
	16 - 35
	36+

# iMapInvasives map – site scale

**iMapInvasives**  
Sharing information for strategic management

## Maine Invasive Species Map

Instructions Generate Reports Data Entry Links

Welcome back, **Nancy**  
(nanolmstead\_10) 2.031

Home Log Out

Search by Species, Location, or ID #

**Partner Data**

- Nonindigenous Aquatic Species (USGS-NAS)
- Confirmed
- Unconfirmed
- Approximate
- Problem
- Deleted

**Infestation**

**Invasive Species Details**

- Assessments - Animals
- Assessments - Insects
- Assessments - Plants
- Treatments
- Treatment - Problem Data
- Treatment - Deleted Data
- Survey
- Survey - Problem Data
- Survey - Deleted Data

**Map Overlay Layers**

- Counties
- Watershed (HUC 8)
- Conservation Lands

**Conservation Lands**

Transparency: 22%

1000 ft

© 2015 NatureServe. VE\_PC Acknowledgements

**Mouse Position**  
Long: -69.8828 /Lat: 44.2876  
X: 429562 /Y: 4904193

Jimmie Pond

Maple Hill Farm Inn

Clark Signs & Graphics

VT MA NH CT RI NY PA DE MD VA NC SC GA FL AL MS TN KY VA PA NY CT RI MA NH VT ME

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

**Nancy Olmstead**

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**287-8046**



# Those 10+ species

