Invasive plants in Maine’s forests

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Japanese barberry, Wells

Shrubby honeysuckle, Windsor
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

Out of every 100 exotic species introduced to North America, about 10 become established and about 1-5 becomes invasive. “Naturalized;” can be weeds, Beyond “weedy”
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?

Out-compete native plant species, overrun habitats

Second harm to herbivores and on up the-food web
Compete with native tree regeneration
Damage or kill plants directly or indirectly
Highest priority: early detection and control
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
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Additional need in forest management: comply with FSC/SFI Standards

Most important opportunities to keep Maine’s forests clean!
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

Assess the site:
Mapping to figure out: what, where, how much?

Assess landscape:
What plants already infest the surrounding area?

www.imapinvasives.org/meimi
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

Is the surrounding landscape badly invaded?

Yes

Search the site; is it invaded?

No

Search the site; is it invaded?

Yes

Are stands to be managed invaded?

No

Survey regularly (every ~2 years) to check for invasive plants; control immediately when found

Yes

Understory of stands to be managed invaded, or only edges, roadsides, etc.?

No

Survey annually; if found, treat to suppress/contain

Yes

Treat to suppress and/or contain

Understory invaded

Treat to eradicate

Only edges, etc. invaded

If resources available, treat to eradicate; if not, treat to suppress/contain

Monitor annually; re-treat as needed

Monitor regularly; re-treat as needed
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
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

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acer platanoides</td>
<td>Norway maple</td>
</tr>
<tr>
<td>Ailanthus altissima</td>
<td>tree of heaven</td>
</tr>
<tr>
<td>Allaria petiolata</td>
<td>garlic mustard</td>
</tr>
</tbody>
</table>

http://extension.unh.edu/goodforestry/
FIELD GUIDE FOR LAND MANAGERS, FORESTRY PROFESSIONALS AND LANDOWNERS


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

www.imapinvasives.org/meimi
iMapInvasives map – by county
iMapInvasives map – site scale
THANK YOU! .... QUESTIONS?
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Those 10+ species