JAPANESE BARBERRY
CONTROL ALTERNATIVES

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Japanese Barberry – the problem

- **Human Health**
  - Increased nitrification
  - Decreased litter layer
  - Increased tick populations

- **Ecosystem Health**
  - Lower tree regeneration
  - Fewer herbaceous plants (wildflowers)

May affect water quality in adjacent reservoirs
New stems arise from the crown (top), not from roots.
Initial timing not crucial

Dormant season

Growing season
2-Step Procedure

Initial healthy plant

Step 1 – Kill aboveground tissues by cutting or with fire

Roots grow new shoots, lowers root reserves

Step 2 – Kill smaller plants with heat or herbicides
1st step – Reduce size

Fire

Saw

Chopper
Prescribed fire
Effective (except dense clumps)
Relatively cheap (20+ acres)
Site/personnel limited

Brush saw
Effective (if ≤ 3 ft tall)
Moderate cost
Must get all stems

Chopper
Needs follow-up
Expensive
Needed if barberry taller than 3 ft
**Follow-up is essential**

<table>
<thead>
<tr>
<th>Clump #586</th>
<th>Crown size (feet)</th>
<th>Number of stems</th>
<th>Basal diam (ft)</th>
<th>Stem diameters (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>6.7</td>
<td>6.9</td>
<td>45</td>
<td>1.1</td>
</tr>
<tr>
<td>September</td>
<td>2.3</td>
<td>2.3</td>
<td>20</td>
<td>1.1</td>
</tr>
</tbody>
</table>
2nd step - Kill sprout clumps

- Glyphosate
- Control
- Triclopyr
- Propane
Barberry can be controlled!

2nd treatment step
- Propane
- Herbicide
- Control

Barberry cover

Months since 1st step treatment

CAES- Plant Science Day 2008
Propane torch useful for:

- Wetland areas
- Small patches or parks
- When volunteer labor pool available

- Leaf litter must be damp
Herbicide better for largest clumps

![Graph showing mortality 1-year later for different initial clump sizes and treatments (Propane, Herbicide, Control)].

- Mortality 1-year later
- Initial clump size (feet)
- Propane
- Herbicide
- Control
Consider herbicide where:

- Clumps larger than 4-feet
- Barberry is growing in full sun
- Where oriental bittersweet also present

- Native wildflowers and tree seedlings may be killed
Potential to reduce tick populations

Scott C. Williams
Kirby C. Stafford III
Louis A. Magnarelli
Barberry controlled $\rightarrow$ fewer mice

<table>
<thead>
<tr>
<th>Condition</th>
<th>Median Mouse Population (n/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full barberry</td>
<td>~120</td>
</tr>
<tr>
<td>Barberry controlled</td>
<td>~90</td>
</tr>
<tr>
<td>No barberry</td>
<td>~60</td>
</tr>
</tbody>
</table>
Less barberry → Fewer larval ticks

- Dense barberry
- Barberry controlled
- No barberry

Larval Ticks per Mouse

Graph showing the comparison of larval tick counts per mouse in different conditions of barberry density.
Barberry controlled → fewer adults ticks

- Dense barberry: High tick density (ticks/acre)
- Barberry controlled: Moderate tick density (ticks/acre)
- No barberry: Low tick density (ticks/acre)
Barberry can be controlled, and propane provides an organic alternative.

Barberry control appears to reduce tick populations.
Large scale (5+ acre) barberry control & Effect on mice and tick populations
Invasive / Deer Interactions
Propane torch studies

- Japanese stiltgrass
- Multiflora rose
- Honeysuckle
- Winged euonymus