

# Managing Bittersweet and Knotweed

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Presented by the Merrimack  
Invasive Species Committee

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# Categories of Management

## Mechanical

Physical means of removal.

Examples:

- Digging
- Pulling
- Cutting
- mowing

## Chemical

Utilizing pesticides (herbicides, fungicides etc.), organic or otherwise.

Examples

- Glyphosate
- Triclopyr
- Vinegar

## Biological

Using natural predators and diseases

Examples

- Goats
- Beetles
- Fungi

# Oriental Bittersweet



# Oriental Vs. American Bittersweet

<https://bplant.org/compare/566-2417>

Main Difference: Location of berries

- Oriental: along the stem
- American: End of stems

Hybridization is possible.

- Plants can cross pollinate.
- This may make ID difficult from leaves.

# Understanding the Problem

How it spreads: Berries dropping, birds spreading berries

How it damages:

- Girdling
- Weighing trees down
- Outcompeting



*Invasive Asiatic bittersweet girdling a tree. Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org*



# Management

**When:** Before it develops berries!

**How? Mechanical means first, and primarily:**

- Pull small vines when it's muddy in the spring, if possible.
- Dig vines to get entire root
- Cut or mow vines regularly to reduce their energy stores and prevent them from climbing
- Cut vines of all sizes that are growing up trees, and also cut two feet above initial cut to ensure they can't vine up their old stems.

# Further Steps

## Chemical means when mechanical isn't possible or practical

\*Always read the label! The pesticide label is the law.

\*Do not use herbicides in or near water sources or wetlands. Only use in dry, calm weather.

- Add food coloring to your pesticide to make it easy to see.
- Starting in September, freshly cut stems and dip ends in vine killer.
- Larger vines, freshly cut live stems and paint with vine killer.
- Why September? That's when plants start pulling their energy back into their roots for the winter. Also early spring, before most natives have emerged.
- Use foliar (on the leaves) spray for large swaths of bittersweet, where other plants are not present. Eg. NOT when growing on a tree.

# Disposal

- Bag it and trash it
- Dry or solarize (lay in black bags in the sun for a few weeks) to kill, then compost
- Berries Present? Bag it on site. Tie bags. Put in the trash



# Questions about Bittersweet?

## Resources

<https://bugwoodcloud.org/mura/mipn/assets/File/Educational%20Resources/Oriental%20Bittersweet%20Mgmt.pdf> \*\*\* Excellent, detailed resource for management.

Especially read if considering chemical management options.

<https://extension.psu.edu/oriental-bittersweet>

# Knotweed





# Identifying Characteristics

Leaves alternate like a zig zag along the stem

Noded stems make it look like bamboo





# Flowers: August and September





# Forms Dense Stands





# Seeds, and in Winter



# Three types of Knotweed

| Variety                  | Leaves                                                                       | Height of plant                                            |
|--------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>Japanese Knotweed</b> | Around 6" long, 3-4" wide. More triangular in shape                          | Up to 9' tall                                              |
| <b>Giant Knotweed</b>    | Up to 16" long, heart-shaped                                                 | Up to 15' tall                                             |
| <b>Bohemian Knotweed</b> | Between 6 and 16" long, shape somewhere between a heart, and more triangular | Shorter than giant knotweed, taller than Japanese Knotweed |



<https://adkinvasives.com/Resources/knotweed>

<https://www.dnr.state.mn.us/invasives/terrestrialplants/herbaceous/knotweeds.html>



# Understanding the Problem

## How it spreads:

- Rhizomes
- Stem and root fragments (as small as 2" piece)
- Seeds (to a lesser extent)

## How it damages:

- Dramatically outcompetes natives (allelopathic\* and aggressive)
- Forms dense stands
- Creates monoculture
- Grows through concrete (including home foundations)
- Visibility issues on roadways
- Erosion issues along waterways - additionally exacerbating the spread

# Management...it's complicated

## Mechanical Management:

- Mechanical means is highly limited, and rarely if ever effective at eradication.
- Do NOT mow.
- Do NOT trim.
- IF it is a NEWLY established stand, within the past year, you may dig dig dig it out.
- If it is a small stand, you can try to cut and dig frequently to diminish energy stored in the roots. But if you get complacent...twas for naught.
- Goats for management of large areas where chemicals cannot be used
- If it is a small stand, the mulch method *might* work in combination with other methods - see next slide

# The smothering system

1. Let Knotweed grow in spring, then cut it down to the ground in June.
2. Cover with a lot of mulch to prevent stems from puncturing tarp.
3. Cover the entire area with 7mm thick, black tarp, **overlapping the stand by 5-10 feet in every direction** to ensure any new growth will be covered, and growth won't creep out.
4. Add weight to top of the tarp and seal edges with rocks, mulch etc.
5. If there are any tears or holes, patch them.
6. Cover the tarp with more mulch or rocks to block UV rays, which degrade the plastic.
7. After **at least 5 years**, the tarp may be removed and the area replanted. Maybe...

The most recent research finds this method to be overall ineffective on its own. May be effective when combined with other methods.

<https://mm.nh.gov/files/uploads/agriculture/documents/japanese-knotweed-control.pdf>

[https://www.mdpi.com/2223-7747/10/10/2152?utm\\_source=chatgpt.com](https://www.mdpi.com/2223-7747/10/10/2152?utm_source=chatgpt.com)



# Most effective method...chemical

\*Always read the label! The pesticide label is the law.

\*Do not use herbicides in or near water sources or wetlands. Only use in dry, calm weather.

\*depending on the location of the infestation, a professional may need to be hired.  
Eg. near wetlands or waterways, next to public roadways

- Contact department of ag for a list of commercial, Certified Pesticide Applicators.

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# Herbicide Management Steps

1. Wait until June, then cut to the ground (see next slide for disposal of cuttings)
2. Wait until the plant flowers in August/September
3. Spray leaves with 2.5% glyphosate solution with a surfactant
4. \*\*\*Avoid pollinator harm!
  - a. Spray at night, inform local bee keepers, or spray as soon as you notice the flowers dying back, but BEFORE the first frost.

# Disposal

NEVER COMPOST OR PUT IN BRUSH PILES. NEVER DUMP IT IN THE WOODS!

- Bag it and trash it if you can
- Dry on impervious surface (eg. driveway, tarp) until completely dried out and brown (weeks), then burn it or bring to solid waste (trash).
- Solarize it by laying it on an impervious surface and covering with a black tarp to heat it. Then burn the dead brush.
- Cut and leave on site, if you will later be spraying the site with herbicide
- Do NOT transport Knotweed that has gone to seed. This will only spread it.



# Questions? Knotweed or other invasives

## Resources

[https://bugwoodcloud.org/mura/mipn/assets/File/Educational%20Resources/Knotweeds%208\\_5x11%20\(locke\).pdf](https://bugwoodcloud.org/mura/mipn/assets/File/Educational%20Resources/Knotweeds%208_5x11%20(locke).pdf)

<https://mm.nh.gov/files/uploads/agriculture/documents/japanese-knotweed-bmps.pdf>

<https://www.merrimackoutdoors.org/invasives>