

You Ain't From Around Here! Exotic Invasive of the Quarter: Japanese Knotweed (*Polygonum cuspidatum*) Part 2

By: Jennifer Gagnon, Virginia Tech

As you may recall from the [Spring edition of the Virginia Forest Landowner Update](#), Japanese knotweed is an herbaceous bamboo-like perennial native to Japan, China and Korea. This species is infamous for the high levels of ecological and economic damage it causes worldwide.

In Part 1, I mentioned that the range map showing where Japanese knotweed has been identified in Virginia was incomplete. I just submitted a report on a Montgomery County infestation using the MAEDN (Mid Atlantic Early Detection Network) App. This App allows you to upload photos of any invasive species you find, record the location and size of the infestation, and upload it to the EDDMapS (Early Detection and Distribution Mapping System). It was simple and easy to make the report (aside from having to park on the side of a narrow two-lane country road with a speed limit of 55 mph.) I look forward to seeing my report appear on the map. Makes me feel like I've done something constructive with my day. You can download the free MAEDN App here:

<https://www.eddmaps.org/midatlantic/>. So how did I know I was looking at Japanese knotweed?

How to identify Japanese knotweed

Leaves: The simple, alternate leaves emerge red; as they mature, they turn green with dark red veins. Mature leaves are green and have an abruptly pointed tip and a flat or tapering base. Mature leaves are up to 6" long and 5" wide.



Mature Japanese knotweed leaves are alternately arranged, with a pointed tip and flat base. Photo by Nisa Kairmi, Wisconsin DNR.

Stems: The stems look like bamboo, with rings and purple speckles. Mature stems are upright, round, hollow with large nodes, but not woody. They can reach heights of 10-13'. Immature stems, or stems that have been mowed, are not hollow and are thinner and shorter. All stems are covered by a fine whitish coating that wipes off easily.

Fruit: The black/brown, shiny, ovoid, 3-winged seeds are about 0.3" long. They are dispersed by wind, water, birds, and insects. Not all seeds are fertile.

Flowers: Small greenish-white flowers are arranged on spikes near the end of the plant's arching stems. Flowers bloom August through September and are insect-pollinated.

Roots: Japanese knotweed has a deep taproot up to 10' long and an extensive network of rhizomes that can extend 2-5' laterally in the soil.



Japanese knotweed stems (left) look similar to bamboo (but are not woody) and are typically hollow with large nodes. The flowers (right) are small greenish-white arranged on spikes. Photos by: Ansel Oommen and Jim Miller, USDA Forest Service.

How to control Japanese knotweed:

Japanese knotweed is a very difficult species to control. Older populations have more extensive root systems and seem to be even more difficult to control. Old stems and roots have been known to sprout up to 3 years after being cut, so follow-up on treated sites is required for 3-10 years. A combination of mechanical and chemical controls may be best,

although results of effectiveness are inconsistent, probably due to differences in below-ground resources.

Manual: Whether you attempt manual control via hand-pulling, mowing, digging, tilling, or excavating, these methods alone are not recommended because roots must be completely eliminated and disposed of. With the extensive root system of Japanese knotweed, this is highly unlikely.

Fire is not an effective manual control, as Japanese knotweed is not terribly flammable.

Chemical: Although herbicides with glyphosate as the active ingredient effectively kill the leaves of Japanese knotweed, they are not transported efficiently through the root system, resulting in only top-kill. The roots will re-sprout.

Imazapyr has shown the greatest documented effectiveness. Herbicides with imazapyr as the active ingredient work slowly and affect the root system before the leaves. This provides effective long-term control. However, imazapyr is a non-selective chemical, meaning that it will also kill desirable vegetation it may come into contact with. Also, it stays active in the soil for a long time. The typical recommendation is to reclaim the site, once control is achieved, as soon as possible with natives. But if the site was treated with imazapyr, native species cannot be planted for about a year.

A more targeted approach is to apply an imazapyr -based herbicide directly to leaves or inject it into individual stems after cutting them (a time-consuming approach only really practical for small infestations.)

Biological: The knotweed aphid (*Aphalara itadori*) is an insect in the Psyllidae family (a family of plant feeding insects that tend to be very host-specific) that feeds on Japanese knotweed. This aphid is the first biological control for a weed has been sanctioned in the European Union. In 2019, the USDA's Animal and Plant Health Inspection Services opened an environmental impact assessment on releasing *A. itadori* in the US for comment.

Don't spread it: If you do attempt to manually control Japanese knotweed, it is essential to dispose of the plant waste completely and properly. New plants can sprout from fingernail-sized pieces of material, so try not to leave any behind. Plant parts should be disposed of in tied black bags or dried out and burned. And don't move soil that has had knotweed growing in it.

How to exact revenge using Japanese knotweed

In Part 1, I promised details on using Japanese knotweed to exact revenge on your enemies. To do that, I had some homework that entailed reading a book called *A Prisoner of Birth* by Jeffrey Archer. My apologies to any Jeffrey Archer fans out there. Because I hated all 501 pages of this book. I see he's written many books, including international best sellers, so I know he has fans. I am not one.

From the novel (set in Great Britain), I learned these are the steps you must take to exact revenge on your enemies using Japanese knotweed:

1. Be wrongfully accused and convicted of killing your best friend.
2. Share a jail cell with someone who could pass as your identical twin and is being released from prison shortly.
3. When your “twin” is murdered (not by your own doing), assume their identity and their early release date.
4. Upon release from prison, set up a series of weirdly complex schemes to bring your enemies down.
5. One scheme must include getting you enemies to invest heavily in a commercial property in England.
6. On said commercial property, place 71 white pebbles 9 paces apart, and create a small crevice at each one.
7. Return to commercial property by dark of night, right before a rainstorm, remove white pebbles, and insert a small piece of knotweed rhizome into each crevice.
8. Sit back and relax as the knotweed grows and external financing for the commercial site falls through, resulting in the shaming and demotion of your enemies [insert evil laughter].

Easy-peasy.

I do truly love it when exotic invasives make their way into common culture. Japanese knotweed is indeed rampant in British culture. In addition to being featured in *A Prisoner of Birth*, it has been used to describe Former British Prime Minister Theresa May (the knotweed Prime Minister) and it's been used as a locker room insult for losing Manchester United players. I haven't heard any common culture references to knotweed in the US, but it may only be a matter of time. Something I'll try to get started!

Jennifer Gagnon is an Extension Associate in the Department of Forest Resources and Environmental Conservation, 540-231-6391, jgagnon@vt.edu.