

Invasive Plants in Pennsylvania

Japanese and giant knotweed

Fallopia japonica Sieb. & Zucc. and
Fallopia sachalinensis F. Schmidt ex Maxim.



Leslie Mehrhoff, Univ. of Connecticut

Background:

Both species of knotweed were introduced into North America for ornamental use and for forage and erosion control in the late 1800s.

Range:

Both Japanese and giant knotweed come from Japan. They can be found throughout much of the United States and Canada, as well as Europe.

Habitat:

These plants are found at sites with varying combinations of sun, moist soil and human disturbance, such as stream and river banks, wet meadows, roadsides, railroad and utility rights-of-way, vacant lots and waste places.



Brett Pifer - DCNR BOF

Description:

Both are annual, herbaceous perennials with erect, hollow stems that are light green, smooth, jointed and swollen at the nodes (resembling bamboo).

Early in the season, new shoots can grow three to four inches per day. Knotweed grows three to 12 feet tall. The two species are known to hybridize, so ID can sometimes be difficult. The shape of the leaf base is the best characteristic – Japanese knotweed leaves are squared-off, giant knotweed's are heart-shaped.

The plant's greenish white flowers are functionally unisexual, grow approximately four inches in length and appear from August to October. The fruits are papery and contain a three-sided shiny, brown seed.

Biology and Spread:

Knotweeds spread primarily by rhizomes. The rhizomes can be dispersed by natural causes, such as flooding and erosion, and also by man-made disturbances to the soil. Cut or broken stems will also root if left on moist soil or put directly into water. It produces only small amounts of viable seed that are dispersed mainly by gravity, wind and water.



Kelly Sitch, DCNR - BOF

Ecological Threat:

Knotweeds are capable of quickly forming dense stands where they can crowd out native vegetation. Thickets can clog small waterways and displace streamside vegetation, increasing bank erosion and lowering the quality of riparian habitat for fish and wildlife. Once established, these stands are very difficult to eradicate.

How to Control this Species:

The key to successful knotweed mgmt. is controlling the rhizomes.

Manual and Mechanical Mechanical methods alone are largely ineffective. It may be possible to grub or pull single plants if they are not well established and soil conditions allow for complete rhizome removal. Small portions of the rhizome system not removed have the potential to resprout.

The herbaceous stems of knotweed can be cut or mowed quite easily. Cutting alone will not control the plant but when performed after June 1 will significantly reduce the height of the regrowth.

Chemical

Several herbicides, such as glyphosate, are effective in controlling this species. If the plants grow in a wetland, be sure to use an aquatic approved herbicide. Check label directions and state requirements.

Foliar herbicide applications made after July 1 and before the first killing frost are most effective at injuring the rhizomes. During this time of year carbohydrates produced in the leaves are moved to the rhizomes for growth and storage. Foliar applied herbicides move through the plant with the carbohydrates.

Japanese knotweed (*Polygonum cuspidatum*)



Japanese knotweed in flower (Photo by Kelly Sitch, DCNR - BOF).



Japanese knotweed sprouts early in growing season

Japanese knotweed (*Polygonum cuspidatum*)



Previous year's Japanese knotweed stems in winter & early spring.

Japanese knotweed Treatment Guidance

Small populations of knotweed (1-5 plants) can be considered for digging and hand removal. Be advised that the taproots of knotweed are very extensive and often branch, exercise caution while digging these plants. Consider an herbicide application to the roots if they break off when pulling or become difficult to remove.

The most effective means to treat knotweed is to cut the plants and treat with glyphosate eight weeks later. Typically this cutting occurs in late May or June and treatment is conducted eight weeks following cutting, this helps to reduce root/rhizomes reserves prior to spraying.

If there is no mowing or cutting, treatments should take place after July 1st and end by mid-September, this should be a high volume application. Depending on the glyphosate formulation, a surfactant may be necessary (Glyphomate 41 does not need an additional surfactant).