



FACT SHEET: INVASIVE WEEDS

JAPANESE AND GIANT KNOTWEED

Japanese knotweed (*Polygonum cuspidatum*) also referred to as Japanese bamboo or Japanese fleece-flower and Giant knotweed (*Polygonum sachalinensis*) are two invasive, exotic weeds found throughout much of the United States and Canada. Originally introduced from Asia in the late 1800’s as ornamentals these plants now occur over a wide range of sites and pose a significant threat to riparian areas by forming dense thickets which shade out other vegetation and reduce native species diversity.



Japanese and giant knotweed are upright, herbaceous, perennial plants with mature heights of over 10 feet. Both species develop an extensive network of underground rootstocks called rhizomes that give rise to dense clumps of thick, bamboo-like, hollow stems that are erect and branched at the top. Their leaves are somewhat heart-shaped. The leaves of Japanese knotweed are roughly 6 inches long and 4 inches wide while giant knotweed leaves are upwards of 12 inches long and 10 inches wide. Lacy,

white clusters of male and female flowers (typically on separate plants) are produced in July followed by winged seeds. Each female flower cluster is capable producing a thousand or more viable seeds.

Both species of knotweed grow especially well along river and stream banks preferring moist, unshaded habitats. However, they tolerate a wide variety of soils and growing conditions including both drought and salinity. Knotweed can be found growing along roadside and railroad banks, utility rights-of-ways, and on strip-mine spoils. Growth is suppressed by shade and as a result knotweed rarely invades forests. Once established, knotweed spreads aggressively through an extension of its rhizomes. Lateral expansion rates of 6 to 8 feet per year are not uncommon. Spread to new locations is often facilitated by the movement of contaminated fill dirt and through flood waters moving fragments of stem and



rhizomes downstream. Scoured shore lines are rapidly colonized following floods. In urban areas knotweed spreads from discarded cuttings and neglected garden plantings.

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



The only truly effective means for controlling knotweed is chemical control using herbicides. 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. Herbicides containing the active ingredient glyphosate are effective at controlling both species of knotweed. For large infestations high volume (spray to wet) applications are the most practical. Care should be taken during application to avoid injury to non-target plants. Herbicides containing imazapyr and dicamba are also effective but have significant soil activity and should not be used near desirable trees.

Using both mechanical and chemical methods together is one of the most effective forms of knotweed control, particularly for small patches or sensitive areas. In Pennsylvania, cutting or mowing knotweed around June 1 will produce regrowth much shorter than the original plants thus facilitating spray applications and effectively reducing stored carbohydrate reserves. Following cutting wait a minimum of six weeks before making any herbicide applications. This allows time for the plant to regrow and begin to send carbohydrates back to the rhizomes. The shorter canopy allows for easier and more selective herbicide coverage and can be effectively treated using a low volume backpack sprayer. Herbicide applications will be required to spot treat individual surviving plants after July 1 of the following season. To prevent re-establishment continue with follow-up maintenance visits annually.

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