

Forest Health

Invasive Plant Hit List: Japanese Knotweed

by Jody Thompson



Introduction

Japanese knotweed is a non-native invasive shrub that is native to several countries in eastern Asia. Also known as Japanese bamboo, Mexican bamboo, and fleecflower, it can form very dense stands that shade out, out-compete, and prevent the germination of native plants. This invasiveness results in a loss of biodiversity and can lead to the degradation of wildlife habitat and food sources. Japanese knotweed is gradually taking hold in Kentucky, where it can be found, among other places, along roadsides and in moist areas near streams. Japanese knotweed is on the list of 100 of the world's worst invasive alien species, published in 2000 by the Invasive Species Specialist Group, which is the global organization that promotes and facilitates the exchange of invasive species information and knowledge across the globe.

Japanese knotweed spreads primarily by rhizomes (underground stems) and also by seeds. It tolerates a wide range of growing conditions and has the potential to become a much worse problem in Kentucky than is currently seen. In other countries such as Great Britain, the level of Japanese knotweed infestation is such that it causes structural damage to homes and other buildings. It is found in most U.S. states and occurs in at least 31 Kentucky counties. However, there



Japanese knotweed is an exotic plant brought to the U.S. as an ornamental that is extremely invasive once established.

Photo courtesy: Jan Samanek, State Phytosanitary Administration, www.forestryimages.org

have been no focused surveys in Kentucky, and Japanese knotweed likely infests other areas.

Japanese knotweed was introduced to the eastern United States in the late 1800s as an ornamental. Even then, the difficulty of controlling this plant was recognized, although not well stressed. In its native habitat, Japanese knotweed is naturally controlled by numerous organisms. Unfortunately, those organisms aren't found outside eastern Asia, and Japanese knotweed has few herbivores that keep it under control in other environments.

Japanese knotweed is often referred to by two different scientific names, *Fallopia japonica* and *Polygonum cuspidatum*. Although, this isn't important to many people, it may result in the unintentional sale and purchase of Japanese knotweed as an ornamental plant because of confusion in the marketplace. The sale and use of Japanese knotweed is banned in some U.S. states and cities, although in many areas, it is still promoted as an ornamental plant.

Identification

Japanese knotweed is a shrub that can grow 3 to 10 feet tall. The branches are usually hollow, which explains one of its other common names, bamboo. Its branches are long and canelike with a zigzag appearance, and a single leaf arises from the angle of each zigzag. The leaves are heart-shaped to oval. Their size can vary, but they are usually around 6 inches long and 3 to 4 inches wide. White flowers, which appear in late summer, form long, narrow clusters that often



Like the branches of Japanese knotweed the leaves are alternate ("zigzag") on the plant and 6 inches long when fully developed.

Photo courtesy: Steve Manning, Invasive Plant Control, www.forestryimages.org



Japanese knotweed has invaded this Martin County, Ky. roadside.

Photo courtesy: Chris Evans, River to River CWMA, www.forestryimages.org



New shoots forming at the base of the plant. The root system of Japanese knotweed must be killed to control the plant.

Photo courtesy: Philip Rusted, Thurlow Countryside Management (r&d), www.forestryimages.org

point upwards and arise from the stem at the leaf base. Japanese knotweed shows new shoot growth in early spring and can sometimes put on more than 3 inches of growth a day. In many areas, aboveground growth dies back every winter, but it can reach its full height again by summer.

Removal

Japanese knotweed has proven to be very difficult to control. Its vigorous growth in addition to its large root system and ability to grow in a wide range of conditions makes it a plant of great concern. New Japanese knotweed plants will develop from rhizomes, and any part left in the ground will begin producing a new plant almost immediately. When removing a Japanese knotweed plant, remember that an entire stand can be essentially one big plant. The key to controlling Japanese knotweed is killing the root system. The most common methods of control are mechanical removal, herbicide application, and a combination of mechanical and herbicide methods.

Table 1. Control methods for Japanese knotweed (*Fallopia japonica* and/or *Polygonum cuspidatum*).

Method	Timing	Details and Cautions	Herbicides ¹
mechanical (mowing and hand pulling)	anytime	Best for small infestations and small plants only. Cut down or pull up the plants, and be sure to pull up the entire root system or continually cut it to drain its energy stores. Rhizomes left in the ground will produce a new plant.	N/A
cut-stump	late summer to early fall	Cut stems back to a few inches above the ground and treat immediately with herbicide. If the stump is hollow, apply herbicide to the portion of the stump that is available. When new sprouts arise, they can be hand pulled, treated with a foliar spray after new leaves form, or cut back just before new leaf buds open.	Glyphosate based herbicide 50 -100% concentrate in water. Garlon 3a or 4 at 50%. Arsenal AC at 5% in water.
foliar spray	midsummer to early fall	Best used when foliage is not over your head. Thoroughly wet the leaf surfaces until just before runoff with herbicide. Re-treatment may be necessary at the end of the season.	Glyphosate based herbicide (2-5%) or Garlon 3a at 5% solution.
cut and spray	June	Cut stems in June, wait 8 weeks then foliar spray the sprouts just before runoff with herbicide. Waiting before applying herbicide will enable the plant to produce new growth that will more effectively take the herbicide into the roots. This combined treatment approach provides multiple pressures on the root system.	Glyphosate based herbicide (2-5%) or Garlon 3a at 2% solution.

¹ The use of brand names does not imply endorsement and are used based on published recommendations (National Park Service and others) and common availability. Read and follow all directions on label for personnel protective equipment (clothing, eye, skin protection). Follow label directions and precautions in all cases including where and how the herbicide can be used. Label information supersedes any published reports or recommendations contained in this publication.

Illustration courtesy: USDA PLANTS Database, USDA NRCS PLANTS Database, www.forestryimages.org

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