

Japanese Knotweed Identification, Biology and Management

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Japanese knotweed, *Fallopia japonica* (synonyms = *Reynoutria japonica* = *Polygonum cuspidatum*) is a major invasive plant problem throughout North America, and is listed by the World Conservation Union as one of the ‘World’s worst invasive species’. Native to eastern Asia, the plant is aggressively invasive and causes many environmental and landscape concerns.

Identification

Japanese knotweed is an herbaceous or semi-woody, hollow-stem perennial with deciduous foliage. Identifying characteristics include heart- or spade-shaped leaves with flat bases, prolific small flowers that are white to light green and develop in leaf axils and near the ends of branches, and a brown bamboo-like appearance in winter. Knotweed has raised nodes on the stems, similar to bamboo, and newly developing leaves and stems often have a red to purple coloration.

Concerns

As an aggressive invader, knotweed displaces native plants through competition for light and nutrients (Figure 1), and possible allelopathy (chemical toxicity to other plants). In addition

Figure 1: Japanese knotweed invading a lawn



Figure 2: Japanese knotweed invading a lake shore



to negative effects on native plants, knotweed grows prolifically in watersheds and can alter hydrology, negatively impact habitat of aquatic organisms, and cause many related ecological problems throughout an invaded habitat. Knotweed invasions often spread downstream as water carries small pieces of plants which start new infestations wherever they are deposited (Figure 2).

Knotweed also produces deep and aggressive roots and rhizomes (root-like storage organs). These underground parts can damage building foundations, walls, driveways, sidewalks, and any other built structures. Shoots of knotweed have even been documented to sprout directly through concrete and asphalt.

Management

Physical removal of the plants, mowing, or other mechanical means of control are very rarely effective because of the deep root system and ability to sprout from very small vegetative fragments. In some cases, physical removal actually results in a larger plant or patch of plants the following year. Even complete removal of 2-3 meters of soil to remove roots and rhizomes has proven ineffective in many cases. Composting knotweed is not an effective eradication method and is more likely to spread the plant.

Figure 3: Young stem



Successful management requires multiple applications of a systemic herbicide that moves into and kills root systems, preventing re-sprouting. Even with this approach, several years of treatment are usually required to eradicate a population. Foliar applied or injected systemic materials can be effective if employed correctly.

Figure 4: Established Japanese knotweed in bloom



In order to maximize efficacy and minimize the potential for drift, non-target contact, and environmental exposure, Bartlett arborists use a stem-injected, systemic herbicide to eradicate Japanese knotweed infestations. The process involves injecting an appropriate material into the hollow stems of the plant (Figure 3). Once the plant is dead, the debris can be removed without fear of spread. For heavily infested sites or older well-established populations (Figure 4), several years of treatment may be required to fully exhaust the root reserves and eliminate new sprouts. Management options should begin as soon as a new infestation is noted to improve efficacy and reduce the amount of time and materials required.



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