

INVADER OF THE MONTH

JAPANESE KNOTWEED, *Polygonum cuspidatum* Sieb. And Zucc.

Identification

Japanese knotweed (*Polygonum cuspidatum*), also known as Mexican bamboo, is a stout herbaceous perennial that forms large thickets 1-3 meters high. It spreads rapidly by underground rhizomes and offshoots and can also reproduce by seed. It has broad, petioled leaves that are truncate at the base and taper to a pointed tip. Leaves range in size from 0.5 to 1.5 dm long. Japanese knotweed is very noticeable in the landscape in late summer when the tiny greenish-white, paniced flowers are evident and the plant has reached its full height. These flowers are borne in the leaf axils during August and September. The plant is dioecious, thus male and female versions of the inconspicuous flowers are produced on separate plants. The fruiting calyx is wing-angled, 6-10 mm long and the acutely trigonous achenes are shiny black-brown, 3-4 mm long. Seeds appear about two or three weeks after flowering and are wind dispersed. The stout stems are hollow and bamboo-like and become woody and ridged with age. Like other smartweeds, Japanese knotweed has the characteristic ochrea (sheath-like covering) at the junction on the petiole and stem.



Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada*. Vol. 1:676

Similar species and Synonyms

Japanese knotweed closely resembles Giant knotweed (*Polygonum sachalinense*) an exotic species native to northern Japan and the Sakhalin Islands. Giant knotweed can be distinguished primarily by its larger size, greenish flowers and cordate (heart-shaped) leaves which gradually taper to the tip. Giant knotweed is also highly invasive and the two plants are known to hybridize. Taxonomy of Japanese knotweed has undergone many changes over the years. Synonyms include: *Fallopia japonica* (Houtt.) R. Decr.; *Pleuropterus cuspidatus* (Seib. & Zucc.) Moldenke; *Pleuropterus zuccarinii* (Small) Small; *Polygonum cuspidatum* Sieb. & Zucc. var. *compactum* (Hook. F.) Bailey; *Polygonum zuccarinii* Small; *Reynoutria japonica* Houtt.



Japanese knotweed (*Polygonum cuspidatum*)

Where did it come from and where is it now?

A plant of eastern Asia, Japanese knotweed was introduced from Japan to the United Kingdom as an ornamental in 1825 and from there to North America in the late nineteenth century. In Japan, Japanese knotweed is widely distributed and is usually found in sunny places on hills and high mountains. Today, it is found in nearly all of the continental United States, with the exception of portions of the southwest, North Dakota, Florida, Nevada, and Wyoming.

Why is it a problem?

Japanese knotweed grows vigorously and can thrive in a wide variety of habitats. It can tolerate a variety of environmental conditions including full shade, full sun, high temperatures, high salinity, and drought. It is found along riverbanks, coastal marshes, and other wet habitats as well as along roadsides and in upland areas. It forms dense stands, excluding nearly all other vegetation and reducing wildlife habitat. Japanese knotweed can also cause flooding in areas where it chokes river and stream channels.

Prevention and/or Management

A. Grubbing: This method is appropriate for very small populations or in environmentally sensitive areas where herbicides cannot be used. Using a digging tool, remove the entire plant including all roots and runners. Care must be taken not to spread rhizome fragments. Juvenile plants can be hand-pulled depending on soil conditions and root development. Any portions of the root system not removed will potentially re-sprout. All plant parts, including mature fruit, should be bagged and disposed of in the trash to prevent reestablishment.

B. Cutting: Repeated cutting may be effective in eliminating Japanese knotweed, but this strategy must be carried out for several years to obtain success. Cut the knotweed close to the ground at least 3 times a year. Cutting stems over time results in a significant reduction of rhizomatous reserves. Manual control is labor intensive, but where populations are small and isolated or in environmentally sensitive areas, it may be a good option. Both mechanical and herbicidal control methods require continued treatment to prevent reestablishment of knotweed. Reintroducing native plants as competitors may be an alternative to continued treatment. However, more research needs to be done on which native species might be effective competitors and how they should be reintroduced.

C. Herbicides: Triclopyr will kill the top growth within a few days, but Japanese knotweed may re-sprout following treatment. Residual effects on emergence and growth the following year are variable. Glyphosate applied in spring or early summer may stunt or yellow growth, but knotweed will generally recover and continue growing. Glyphosate treatments in late summer or early fall are much more effective in preventing regrowth of Japanese knotweed the following year. The following is the recommended strategy:

1. Late June – Cut or mow down stalks.
2. Allow knotweed to regrow.
3. After August 1, spray knotweed with ROUNDUP [glyphosate (41%)] @ 2.5 fl. oz./gal.

Established stands of Japanese knotweed are difficult to eradicate even with repeated glyphosate treatments. Adequate control is usually not possible unless the entire stand of knotweed is treated (otherwise, it will re-invade via creeping rootstocks from untreated areas). However, glyphosate treatments will greatly weaken the plant and prevent it from dominating a site.

Compiled by Penelope Sharp, Environmental Consultant, from resources available on the Invasive Plant Atlas of New England (www.ipane.org) and the Connecticut Invasive Plant Working Group (www.hort.uconn.edu/cipwg) websites.