

PLANT MATERIALS TECHNICAL NOTE

Identification and Control of Japanese Knotweed

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INTRODUCTION: Japanese knotweed is a perennial weed introduced from eastern Asia that has escaped cultivation and become invasive across broad areas of the U.S. Used for erosion control and ornamental landscaping, it is being found with increasing frequency in Montana as single plants or small stands. Plant populations outside of cultivation have already been identified in numerous Montana counties since 1961. This Technical Note provides plant identification and control information.

I. DESCRIPTION: Japanese knotweed *Polygonum cuspidatum* Sieb. & Zucc. is a member of the buckwheat family (Polygonaceae) and is referred to by several common names including Japanese fleecflower, Japanese bamboo, Mexican bamboo, crimson beauty, or Reynoutria. It has several scientific name synonyms including *Fallopia japonica*, *Pleuropterus cuspidatus*, *Pleuropterus zuccarinii*, *Polygonum cuspidatum* var. *compactum*, *Polygonum zuccarinii*, and *Reynoutria japonica*. Japanese knotweed is a herbaceous perennial plant with an upright, shrub-like habit (FIGURE 1). It has a rhizomatous root system and can spread by stolons. Japanese knotweed can reach 10 feet in height on moist, fertile sites, although it normally attains a mature stature of 3 to 6 feet in Montana. A distinguishing identification feature is the membranous sheath that surrounds the joint at the base of each stem. The hollow stems are smooth, stout, and swollen where each leaf is attached. Stems have a characteristic reddish-brown color that is obvious after leaf drop in the fall (FIGURE 2). In Montana, the leaves are normally 4 to 5 inches long and 2 to 3 inches wide (FIGURE 3). Leaf shape is ovate to somewhat triangular with a pointed tip. Japanese knotweed is dioecious, with male and female flowers on separate plants. The inconspicuous greenish white to white panicles appear in late summer in south central Montana (FIGURE 4). Fruit set has not been observed on plants at five sites in Carbon and Yellowstone Counties, Montana, presumably because only one sex of plant is present, or because conditions are unfavorable for fruit set and/or maturation. Fruit, when present, are 1/8 inch, brown, shiny, triangular achenes.



FIGURE 1.



FIGURE 2.

II. ECOLOGICAL IMPLICATIONS: Japanese knotweed is an aggressive weed capable of forming dense colonies that can exclude native vegetation. It can survive prolonged flooding and is able to rapidly colonize scoured sites along riparian areas.



FIGURE 3.

III. DISTRIBUTION: Japanese knotweed is currently found outside of cultivation in 36 states in the continental United States, including Montana. It is listed as a noxious weed or prohibited invasive species in Alabama, California, New Hampshire, Oregon, Vermont, and Washington. In Montana, the occurrence of Japanese knotweed has been verified by the Montana Department of Agriculture in 25 locations in 12 counties from 1961 through 2004. Montana counties having populations of Japanese knotweed at some point in time since 1961 include Hill, Ravalli, Yellowstone, Broadwater, Cascade, Missoula, Sanders, Flathead, Lincoln, Lake, Valley, and Lewis and Clark. In addition to these counties, Plant Materials staff has identified this species at five additional sites in Carbon, Yellowstone, and Flathead counties.

IV. SPREAD: Japanese knotweed is propagated by seeds and vegetative plant parts (rhizomes, root stocks, runners, and stems) that may be dispersed via water, wind, cultivation, or other human activities. Based on the relatively slow spread of this species in Montana, dispersion by seeds from ornamental plantings appears limited in this state which may be due to the dioecious nature of the plant or the limited growing season in Montana. The occurrence of roadside stands isolated from ornamental plantings suggests the transport of seeds by vehicles traveling through Montana from warmer climates. Avoid moving fill dirt from areas contaminated with Japanese knotweed. When digging plants, remove, sack, and properly dispose of all vegetative parts including trimmed stems.



FIGURE 4.

V. CONTROL: It may be possible to hand rogue or dig up small numbers of plants, although this method is considered marginally effective. Stands should be monitored for several years to guaranty control. This technique should be limited to small juvenile plants growing in sensitive areas where herbicides may not be appropriate. It is necessary to dig up and remove all root stocks and rhizomes, and to burn or bag and remove all plant parts (roots, rhizomes, stems, fruit). Dispose of bagged plant parts in garbage pails, dumpsters, or municipal landfills. In some cases, follow-up spot treatment with herbicide may be necessary for several years.

Chemical control is by application of herbicide to cut stems or foliage. Treated plants may require multiple applications over time, and treated stands should be monitored for several years after the initial herbicide application. The cut stem treatment is used when Japanese knotweed is found growing among desirable, non-target species. Remove stems approximately 2 to 4 inches above ground and immediately apply 25 percent glyphosate or triclopyr plus water to the cut surface. Use an approved formulation of glyphosate in riparian and wetland areas. Always follow label instructions. Bag and dispose of cut stems as previously described.

For individual plants or large solid stands of Japanese knotweed, apply 2 percent glyphosate or triclopyr plus water until the foliage is thoroughly wet but not dripping. Use non-ionic surfactants, fertilizer, and other herbicide enhancing products as recommended and needed. In some cases, it may be necessary

to precede foliar sprays with cut stem applications for effective control. In all cases, monitor infestation sites for several years and control sprouts and volunteers as necessary. Always follow label instructions.

VI. REVEGETATING AFTER REMOVAL OF JAPANESE KNOTWEED: If eradication of Japanese knotweed plants or stands creates sites open to invasion from other weedy species, steps should be taken to revegetate the area with desirable species. Use competitive, fast-establishing species adapted to the environmental conditions characteristic of the site and appropriate for the desired land use.

VII. REPORTING JAPANESE KNOTWEED: If Japanese knotweed plants are discovered growing outside of cultivation, notify the landowner and report the exact location of the infestation to your local county weed control district or Extension Service.

VIII. ALTERNATIVE SPECIES: Several desirable woody plants can be used for landscape screenings in lieu of Japanese knotweed. Depending on soil and climatic conditions, use non-invasive species such as cotoneaster *Cotoneaster* species, skunkbush sumac *Rhus trilobata*, common lilac *Syringa vulgaris*, western snowberry *Symphoricarpos occidentalis*, red-osier dogwood *Cornus sericea* ssp. *sericea*, serviceberry *Amelanchier alnifolia*, western sandcherry *Prunus pumila* var. *besseyi*, rose *Rosa* species, Siberian peashrub *Caragana arborescens*, silverberry *Elaeagnus commutata*, and other hedge and thicket forming species.

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