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Japanese knotweed: showy flowers and ovate leaves.



Bohemian knotweed: hybrid



Giant knotweed: upper photo: leaves with flowers lower photo: hollow stems and heart-shaped leaves. All Photos: King County, WA, Noxious Weed Program

### Key ID Points

1. Hollow stems with membranous sheath at node.
2. 5-16 feet tall with spade- to heart-shaped leaves.
3. Flowers are showy and form clusters in late summer.

## Knotweeds: Japanese, Giant and Bohemian Identification and Management



Japanese Knotweed in Morrison, Colorado. Photo credit: Patty York, CDA Contact the Colorado Department of Agriculture to report a sighting.

### Identification and Impacts

Japanese knotweed (*Polygonum cuspidatum*), giant knotweed (*P. cuspidatum*), and their hybrid, Bohemian knotweed (*P. x bohemicum*) are bright green, bamboo-like, perennial plants that grow 5-16 feet tall and spread through lateral root systems (rhizomes). Stems are hollow between nodes, and often reddish-brown and swollen at the nodes. The base of the stem above each joint is surrounded by a membranous sheath. Leaves are alternate and large. Japanese knotweed leaves are broadly ovate or spade-shaped with low, bump-like scabers on the underside instead of hairs. Giant knotweed leaves are heart-shaped with long hairs underneath, and Bohemian plants typically have both leaf forms. The small, showy, greenish-white flowers develop on branched clusters and are present in late summer. Seeds are three-sided, black and shiny, and they develop in a papery-winged fruit.

Japanese and Giant knotweed are native to Asia and were introduced to the U.S. as ornamentals and for erosion control and landscape screening. All three species spread and

resprout from roots or root fragments. They can be found growing near water sources, in disturbed areas, and along rights-of-way. All three species can tolerate many environmental conditions such as full shade, high temperatures, salinity, and drought. Infestations can clog small waterways and displace native vegetation, increasing bank erosion and degrading wildlife habitat. Like other species in the genus *Polygonum*, the soil seed reserve is likely long-lived, and site monitoring should be carried out for at least ten years after the last flowering adult plants have been eliminated.

The key to effective control of Japanese, Giant, and Bohemian knotweed is to prevent establishment through proper land management. Maintain healthy riparian corridors, wetlands and rights-of-way, and continually monitor your property for new infestations. The following page provides management recommendations.

All three knotweeds are designated as "List A" species in the Colorado Noxious Weed Act. They are required to be eradicated wherever found in the state. For more information please visit: [www.colorado.gov/ag/weeds](http://www.colorado.gov/ag/weeds) or call the State Weed Coordinator at the Colorado Department of Agriculture, Conservation Services Division at 303-239-4100.



Photo courtesy of Patty York, Colorado Department of Agriculture.

*Polygonum cuspidatum, P. sachalinense & P. x bohemicum*

**CULTURAL**

Cultural control may be possible with persistence. Heavy black plastic should entirely cover infestation but be loose enough to allow growth underneath. Some plants will likely survive, so follow-up seeding and possible herbicide treatments will be necessary. Complete removal of any seedlings or newly established plants by continual hand pulling is also possible.

**BIOLOGICAL**

Biocontrol agents are not included in the prescribed management plans by the State. Eradication is the management objective for all List A's. No biocontrol agents for the knotweeds are available. For more information on the use of biocontrol agents to control weeds in Colorado, please contact the Palisade Insectary of the Colorado Department of Agriculture at 970-464-7916.

**MECHANICAL**

NOT recommended as an eradication treatment due to the extensive and complex lateral root system. If plants are removed mechanically, all plant parts should be burnt or carefully bagged and disposed of in the landfill. Burning the plant as a control method is ineffective and not recommended.

***Integrated Weed Management:***

*Preventing the spread of this plant in Colorado is crucial since it is known to exist only in a few locations. Monitoring your land for infestations, especially lands near water and downstream of known sites, can significantly aid in detecting the species early and eradicating it quickly.*

*Herbicide timing is important in controlling this species. Follow timing recommendations closely.*

**HERBICIDES**

**NOTE:** The following are recommendations for herbicides that can be applied along riparian and wetland areas to treat knotweeds. Rates are approximate and based on smaller infestation, spot-spraying techniques. Please read label for exact rates. **Always read, understand, and follow the label directions. The herbicide label is the LAW!**

| HERBICIDE   | RATE  | APPLICATION TIMING  |
|---|---|---|
| Glyphosate (Rodeo*, AquaMaster*, AquaNeat* are all safe for aquatic use)                            | 2.5% to 3% solution (3.2 to 3.8 oz/gal water) + 0.32 oz/gal water non-ionic surfactant.<br><br>OR<br>5 to 6 ml undiluted herbicide per individual stem for injections | Apply evenly over leaf surface "to wet," not so dripping occurs. Treat when plants are actively growing, pre-bud to flowering stage: June to July (at least half of foliage should still be green).**<br><br>Use a calibrated injection gun to inject just below the third node from July to September. (gun can be bought online) (total treatment must not exceed 8 quarts per acre or approximately 1,000-1,500 stems per acre for suggested rates). |
| Triclopyr (Garlon 3A for aquatic sites)<br>OR<br>Imazapyr*** (Habitat* or Arsenal* for aquatic use) | 1% solution (1.3 oz/gal water) + 0.32 oz/gal water non-ionic surfactant.  | Apply evenly over leaf surface "to wet," not so dripping occurs. Treat when plants are actively growing, pre-bud to flowering stage: June to July.**<br><br>Injection method is not allowed for these herbicides.   |

**\*All starred herbicide products are nonselective and will kill any vegetation contacted.**

**\*\*If leaves are above one's head, plants can be bent down to allow better foliar spray coverage.**

**\*\*\*Imazapyr is NOT recommended for use in ornamental or turf settings.**

## Knotweeds

