



Giant knotweed

Fallopia sachalinensis syn. *Polygonum sachalinensis* *Reynoutria sachalinensis*

Alberta Regulation:
Weed Control Act



Jan Samanek, State Phytosanitary Administration, Bugwood.org



Tom Heutte, USDA Forest Service, Bugwood.org

Overview:

Giant knotweed is a perennial plant belonging to the buckwheat family and native to northern Japan. It was introduced as an ornamental and is valued for its size and white flower clusters. It bears perfect flowers (containing both male and female organs) and is self-fertile. Giant knotweed does produce fertile seed however, like all knotweeds, its primary mode of spread is via its extensive network of rhizomatous roots. Rhizomes can extend metres beyond the parent plant.³

The fast growing, bamboo-like stems can grow 4-5 cm per day² and can reach a height of 1.5 to 6 m by summer.³ Flowering occurs August to October, depending on location.³

Giant knotweed infestations exclude native vegetation and their associated fauna. The large leaves shade out all understory plants. The high accumulation of slowly decomposing leaf litter impacts the nutrient cycling. An analysis of nutrient re-absorption revealed that knotweed re-absorbed 75.5% of its foliar nitrogen prior to leaf fall. This can have long lasting impacts on the nutrient regime of a

site, as well as the nutrient inputs to adjacent aquatic habitats. Leaves and stems die back over winter, except in the mildest climates, which facilitates erosion of the banks of water courses.²

In the UK knotweed is one of their worst plant invaders. Eradication involves removal of the whole plant and soil from the site to a landfill, or soil is passed through mechanical sieves to remove any rhizome pieces.² There are vegetation control companies which specialize in knotweed removal and some offer 20 year guarantees. Rhizomes can penetrate the smallest of crevices in building foundations, so the use of thick, rubberized sheeting is used as a physical barrier in building sites on knotweed contaminated ground.²

Habitat:

Giant knotweed is tolerant of a wide range of soils, nutrient content, and pH.² It grows in sandy, loamy, clay soils, in semi-shade or full sun, but requires moisture. It is intolerant of drought and can withstand temperatures of -40 °C.²

Identification:

Stems: Are usually clustered, sparingly branched, stiff, hairless¹ and grow 3-6 m.³ Stems are hollow except at the nodes, and are a mottled purple-brown.³

Leaves: Are ovate (egg-shaped), 20-40 cm long, about 2/3 as wide, heart-shaped at the base, and with strongly pointed tips.³ Leaves are thin and borne on 1-4 cm petioles.¹ Sheaths around the stem just above the base of the petioles are brown, cylindrical, and 6-12 mm.¹ Veins on the undersides of leaves bear distinct multi-cellular hairs³ 0.2-0.6 mm long.¹

Flowers: Are greenish-white or creamy-white and borne in a compact, drooping panicle, 3-8 cm¹. Seeds are brown, 2.8-4.5 x 1.1-1.8 mm, shiny, smooth with papery wings 1.8-2.2 mm wide.¹

Prevention:

Never purchase or grow Japanese knotweed. Soil containing rhizome pieces can contribute to spread. Flooding and erosion can dislodge rhizome fragments which results in new infestations downstream. Once

continued next page

Giant Knotweed (Continued)

established, giant knotweed is notoriously difficult to get rid of.

Control:

Grazing: Grazing can reduce stem density but only effective if repeated through the growing season and for several successive years.³ Invasive plants should never be considered as forage.

Mechanical: Cutting or mowing are only effective if repeated through the growing season and for several successive years.³ Hand pulling stems or digging out the roots promotes rapid re-sprouting. In very small infestations diligent hand pulling with repetition may be effective. Smothering by the use of black plastic can achieve some control but the long term success is not known.³ All plant debris should be disposed of in land-fill-bound garbage - careless handling of root pieces will result in new infestations.

Chemical: Currently no selective herbicides are registered for use on giant knotweed. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

Biological: Numerous natural enemies of giant knotweed have been identified as part of the biocontrol program for the closely related Japanese knotweed. Giant knotweed has not been the priority target but is included in the host range testing procedures so potential biological control agents may emerge⁴.



Barbara Tokarska-Guzik, University of Silesia, Bugwood.org



Richard Old, XID Services, Inc., Bugwood.org



Richard Old, XID Services, Inc., Bugwood.org



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

REFERENCES

1 *Fallopia schalinensis*. Flora of North America. www.eFloras.org

2 *Fallopia schalinensis*(Giant knotweed). 2012. Invasive Species Compendium. CAB International. www.cabi.org

3 Linda M. Wilson. March 2007. Key to Identification of Invasive Knotweeds of British Columbia. Ministry of Forest and Range, Forest Practices Branch, Invasive Alien Plant Program. www.for.gov.bc.ca/hra/Publications/invasive_plants/Knotweed_key_BC_2007.pdf

4 <http://www.cabi.org/isc/?compid=5&dsid=107744&loadmodule=datasheet&page=481&site=144>