

## Knotweed Background

- native to Japan, China, and parts of Korea & Taiwan
- introduced to Europe and the U.S. in the late 1800's as a landscape ornamental
- occurs in B.C. as an escaped horticulture plant.
- used in the past as a landscape screen & for erosion control.

## Also Known As...

The official scientific name of Japanese knotweed is *Polygonum cuspidatum* but it has also been called *Fallopia japonica* and *Reynoutria japonica*. Some nurseries offer a dwarf variety called *P. cuspidatum* var. *compactum* or *P. aubertii* and goes by common names such as Japanese fleece-flower, Silver Lace Vine, or Silvertine fleece-flower. Giant knotweed, *P. sachalinense* is also known as *Fallopia sachalinensis*. The male flowers of Giant knotweed are a viable pollen source for Japanese knotweed, resulting in male, fertile hybrids known as *Fallopia bohemica*.

## Methods of Spread

As with most weeds, knotweeds' spread is due mainly to human activity. Knotweeds can produce viable seed, but the primary means of spread is by their roots. Rhizomatous roots may extend from the parent plant up to 7 m laterally and to a depth of 2 m. Grubbing, chopping or cultivation of the roots encourages spread. Plants can sprout from root pieces buried up to 1 m deep and growing shoots have been known to penetrate asphalt 5 cm thick.

Also, stem pieces as small as 0.7 gram in soil or water can produce viable plants in 6 days. Once established, young shoots sprout in March-April and can grow 8 cm a day.

### New shoot pushing through plastic & mulch



### 3 foot plant grown from accidental transport of root piece



## Control Options

The strongly rhizomatous nature of knotweeds make them an extremely difficult weed to control. The fact that it occupies moist areas rules out almost all chemical control. Repetitive cutting of stems near the soil surface, followed by application of a systemic, biodegradable herbicide to the cut stems has proven successful. This treatment must be repeated during the growing season, and in subsequent years, until no new shoots appear. An alternate method involves chopping stems near their base and covering them with thick, black plastic and mulch. While this has slowed the weed's spread, it has not eradicated it. The thickness of the mulch seems to be a factor as reproduction has been seen to occur much faster with plants beneath a thin layer of mulch and in direct sunlight as opposed to plants beneath moderate mulch in the shade. **Caution:** stem cutting without follow-up can increase lateral spread and stem density. The potential for biological control of these weeds is unknown at this time.

### New plant growing through thin layer of mulch



## What can you do?

**Learn** to identify both Japanese and Giant Knotweed.

**Do not remove soil** from knotweed infested areas.

**Support** the efforts of individuals & organizations that take action to control knotweed.

**Report** sightings of knotweed in new areas to your local Ministry of Forests office.

Provincial Weed Control Program, Susan Turner and Marian Jones (co-op student) - Winter 2002



# BEWARE

## these alien weeds...

## Japanese knotweed and Giant knotweed

### *Polygonum cuspidatum* & *P. sachalinense*



## A Threat to Biodiversity & Wildlife Habitat

The rapid and aggressive growth of these two knotweed species make them exceedingly invasive weeds of moist areas such as ravines, ditches, and wetlands. These knotweeds quickly form dense, shading monocultures that inhibit the growth of other plants. The dead stems and litter decompose very slowly, thereby inhibiting native seed germination. Infestations disrupt the proper functioning of riparian ecosystems. These knotweed species crowd out native vegetation, decreasing wildlife food and fish habitat.

Slowly decomposing stems and litter



Knotweed encroachment on riparian ecosystem

Fern dying beneath a knotweed canopy



## Currently in B.C. :

Both Japanese and giant knotweed infest Vancouver Island. However, Japanese knotweed has been found in the lower mainland and, in 2001, in a minimum of four locations between Salmon Arm and Revelstoke. Visual observations in B.C. show that giant knotweeds appear to be more aggressive, spreading continuously and growing to considerable height, dominating the landscape while the smaller leaved knotweed grows in shorter clumps. The knotweed's habitat ranges are not yet known, but they may be extensive. For example, *P. aubertii*, a horticulture variety, has a hardiness zone rating of 4 to 7.



'Wall' of giant knotweed

## Giant knotweed *P. sachalinense* is very similar to Japanese except in size

### Field Identification of giant knotweed (*P. sachalinense*)

- leaves 15-30 cm long and at least 2/3 as wide
- at base, petioles have tubular, sheathed stipules
- stems can grow to 4m tall
- greenish-white flowers re 2-3 mm long
- produces both female and perfect (male & female) flowers on separate plants
- originates from Sakhalin Island



Giant knotweed leaf

Photo credit: staff CDFA, California Dept. of Food & Agriculture, Botany Lab

## Watch it grow!? Young shoots of Japanese knotweed can grow as much as 8 cm in one day.

### Field Identification of Japanese knotweed (*Polygonum cuspidatum*)

**General** – Poly = many & gonum = knee (jointed) referring to the many nodes on a stem; a rhizomatous perennial

**Stems** – jointed, hollow, arching stems growing to 3m (10 ft); green when young, becoming reddish-brown with age; swollen nodes; stem above each joint surrounded by a membranous sheath; become woody with age

**Leaves** – alternate, nearly heart-shaped, abruptly pointed and squared off at the base; dark green above with a paler green on the undersides; leaf veins often reddish; short, ridged petioles

**Flowers** - greenish-white or white to pink; about 2mm long; male flowers are erect while female flowers appear droopy; grow from the leaf axils near the ends of stalks; male & female flowers on separate plants; appear late in season, August-September

**Seeds** – 3-winged calyx holding one seed; small, black & shiny; about 2-4 mm long and 2mm wide;

**Dispersal** – propagation is primarily vegetatively by the rhizomes; small stem or root pieces develop into new plants; seeds distributed by water & transported fill

**Habitat** – “Japanese knotweed is one of the most persistent, durable, hardy plants known” (Locandro 1978). Prefers moist areas at low elevations; commonly found in ditches, ravines & wetlands; tolerates a wide variety of conditions, from severe floods to seasonal droughts. While growth is greatly reduced by drought, and new shoots are very susceptible to frost, the plant recovers quickly once favourable conditions return.



Flower bud

Photo source: <http://fncweeds.ucdavis.edu/lesadocs/polygonusp.html>

### Virginia Tech Weed ID Guide



Japanese knotweed leaf



Flower sprays