



## Giant Knotweed Guidelines

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**Name:** Giant knotweed

**Latin name:** *Fallopia sachalinensis*

**Occurrence:** Giant knotweed is native to the island of Sakhalin which is just north of Japan. However, similarly to Japanese knotweed it was brought to Europe to be grown in botanical gardens. It has also spread to the wild and acts as an invasive species. It is similar to Japanese knotweed in many respects but is larger, growing over 4m high and having leaves around 20-40cm. Giant knotweed also has flowers that are greener in colour and leaves that are more rounded at the base than Japanese knotweed with scattered hairs on the undersides.

There is also a hybrid between Japanese Knotweed and Giant Knotweed called *Fallopia x bohemica* which occurs in the UK. This hybrid is particularly worrying as it may be capable of producing viable seed. Stands grow to 2.5 - 4 metres. Leaves are intermediate between Japanese and Giant Knotweed and have scattered stiff hairs on the undersides.



**Biology:** The reddish shoots emerge in spring and grow rapidly up to 4 m tall. The roots can extend to a depth of 2 m. In the autumn, when the shoots are killed by frost, food reserves are translocated down to the stout rhizomes. These form a deep mat and can be more than 2 m deep and 15-20 m long. The rhizomes form pinkish nodules in early spring from which shoots develop in April. The previous stems may still be present as the new shoots emerge and can persist for 12 months or more.

**Persistence and Spread:** Established plants develop persistent woody stocks that increase in mass with age and continue to produce lateral creeping rhizomes. A significant proportion of the biomass of Giant knotweed is below ground.

In the UK, the reproduction of Giant knotweed is purely vegetative, although there are close relations of Giant knotweed that have shown the potential to produce viable seeds in the UK. Spread is by the encroaching growth of established clumps or the dispersal and regeneration of small pieces of plant material, especially rhizomes, but also of stem and crown material. Small fragments of stem of the size produced by a horticultural shredder will regrow and form new plants. The regenerating shoots from buried plant material have emerged through tarmac and concrete. The dumping of waste plant material and the cartage of soil containing plant fragments has been responsible for much of the spread of Japanese knotweed. It is common to see this weed on roadside verges where it has established from fly-tipped garden

waste. Where Japanese knotweed is growing near water, plant fragments can be carried downstream for long distances before developing into new plants. The fragments can even survive a period in seawater.

**Management:** A specialist contractor should be contacted as soon as plants are seen, once established, eradication is much more difficult. Control by cutting alone is ineffective and may increase stem density and the lateral spread of clumps. Regrowth is very rapid. Pulling or digging out the weed has some effect if repeated regularly over a three year period, but all waste plant material must be burnt. Giant knotweed can survive composting. Burning the plant in situ is ineffective. Root barrier fabrics made from reinforced polyethylene laminate have been successfully used to contain the spread of Japanese knotweed. Some on-going research is looking for biological control agents in the countries of origin. The most effective way to control and eradicate Giant knotweed is by using herbicidal treatments carried out by a specialised company.

Topsoil and other brought in soil should be checked for fragments of Giant knotweed. If there is any doubt, the origin of the soil should be checked. Strict hygiene should be followed in dealing with living plant material of Giant knotweed. All fragments should be destroyed by burning or by deep burial to at least 10 m deep. When control is limited to one problem area, re-infestation is likely from adjacent areas. It is necessary to deal with plants in the adjacent areas too and prevent the spread of plant fragments, especially near water or where loose soil is likely to become moved around.

Giant knotweed would appear to be an appropriate candidate for biological control. However, few native insects or plant diseases are known to attack the weed in Britain. An extensive programme of research would be needed to evaluate and develop biological control measures introduced from elsewhere. A rust fungus *Puccinia* spp. from Japan, has shown some promise as a control agent. More recently, a pathogenic leafspot, *Mycosphaerella* spp. and a sap-sucking plant louse, *Aphalara itadori* have been found living on the weed in Japan. Both have given encouraging results and are under assessment as biocontrol agents for Giant knotweed.

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