



Centre for
Ecology & Hydrology

NATURAL ENVIRONMENT RESEARCH COUNCIL

Centre for Aquatic Plant Management

Information Sheet 5: Japanese Knotweed

Japanese Knotweed (*Fallopia japonica*) is an introduced weed which is rapidly colonising river banks and areas of waste land. It is a perennial plant which grows from rhizomes in the spring to a height of about 3m in mid summer with stiff, bamboo-like stems. In the autumn, the leaves and stems die but remain stiff and erect. The plant produces large masses of white flowers in summer but it is not thought to produce viable seeds. The plant overwinters in the form of rhizomes which grow rapidly and have been known to grow through cracks in rock, concrete and tarmac. Cut or broken stems lying on damp soil can root and form new plants. The spread of this plant to new sites may be caused by the transport of contaminated topsoil because fragments of rhizome as small as 1 gram can produce new plants. Spread along river banks may also occur when the shoots are cut and allowed to float downstream and are washed onto damp soil beside the river. Japanese Knotweed forms dense stands which severely impede access to river banks and shade out native species leaving the banks bare and liable to erosion in winter. The rhizomes can penetrate, damage and displace stone and concrete embankments and structures.

MECHANICAL CONTROL

DO NOT FLAIL MOW this plant. Cutting should be with simple blades to create a clean cut with no fragments. Cutting the shoots in spring or summer has no long-term control and may encourage the spread of this weed unless the shoots are collected and burnt. The rhizomes appear to be able to survive for many years, even if shoots are cut regularly. Digging, ploughing and dredging are unlikely to have any long-term benefit because of the extensive nature of the rhizome system and because of the ability of even small fragments to regrow.

Transport of soil contaminated with this plant should be avoided and green shoots should not be cut and allowed to float away from any infected area where engineering works are being undertaken but should be collected, dried and burnt.

Sieving or screening of excavated topsoil on site through a 1-2 cm mesh may alleviate the problem of contaminated spoil, and will allow re-use of the excavated soil on site.

CHEMICAL CONTROL

The only herbicide approved for use in or near water which controls this plant is glyphosate. For maximum effect, the plant should be sprayed at 6 l/ha product from late Summer onwards, and control is best when the plant is sprayed during the flowering period. Control is usually improved if the herbicide is applied to both the topside and the underside of the leaves. A nozzle that creates a 360° swath can be used to flood the leaves. The best method is to walk into the stand, start spraying and walk backwards away from the sprayed material. Large areas can be divided up by cutting pathways into the stand at 3-5 m intervals. Regrowth the following year will be much easier to treat.

Herbicides containing picloram (Tordon 22K), imazapyr (Arsenal) and triclopyr (Garlon 4) are more effective away from the water's edge.



Regular inspections, preferably in May and August, of treated sites are recommended for at least two years with spot treatments on any surviving plants.

BIOLOGICAL CONTROL

None known, although considerable research effort is being made to identify appropriate control agents. Several promising fungal agents have been identified from Japan, in addition to several herbivorous insect species. Work is ongoing and we expect to have an agent suitable for release by 2010.

ENVIRONMENTAL CONTROL

Once the plant has become established, there is no environmental method of controlling it. However, the plant appears to be spread in two ways. First by the importation of contaminated soil which contains fragments of rhizome and it is advisable to ensure that any soil imported to a site is free of contamination. Secondly, the plant is spread by cut or broken stems floating downstream and washing onto bare muddy banks. These fragments are less likely to be able to establish on banks protected by a fringe of reed, covered by a dense grass sward which will hold the stems above the soil surface and allow them to dry out, or banks which have hard surfaces of stone, concrete or steel shuttering.

BEST OPTION

Spray infestations of Japanese Knotweed with glyphosate in August - October, cut the sprayed shoots after 3 weeks if required. Check for any reinfestation for at least two seasons and spot treat. Spray areas away from water with a herbicide containing picloram.

Do not use mechanical control as this is likely to spread and increase infestation unless coupled with chemical control of the residues or burning on site.