

Controlling Invasive Non Native Weeds in a River Environment. (Advice for riparian owners, land managers and anglers).

For all species near watercourses, application of chemicals must be approved by SEARS (Scottish Government) prior to commencement. The application form is available on line at <http://www.sears.scotland.gov.uk/Login.aspx?ReturnUrl=%2fherbicide%2fapplicationform.aspx%3fd%3d1113&id=1113> where registration and submission is free.

Japanese Knotweed. (JK)



JK reproduces only from cuttings, not from seed. It is therefore essential that those involved in Knotweed control take great care to prevent cutting or breaking plant stems or roots.

Recommended methods of control.

There are only two control methods suitable for use in a riparian situation.

1. Spraying using knapsack sprayer and systemic, glyphosate based herbicide. Roundup Pro Biactive is widely accepted as the most effective chemical suitable for use near watercourses.

Timing of spraying is important with the best results achieved during autumn when the plant has developed flowers. Both the top and underside of the leaves should be sprayed before the plant starts to die back for winter. The weed killer is translocated to the roots killing the plant from the ground up. Any re-growth the following Spring should be treated using the same methods. Ongoing monitoring of treated stands is essential as this weed can be extremely persistent and difficult to kill. In all instances, it is likely that more than one application of glyphosate will be required to kill the plant however the impact and biomass of the plant can quickly be reduced using the described methods.

2. Stem Injection is a relatively new technique that is proving to be highly effective in destroying JK. It relies on specialist equipment to inject a measured dose of herbicide into individual JK canes. It is most suitable for use in small stands of the plant.

Under no circumstances is cutting or strimming JK recommended as this only serves to spread the plant. This method also raises the problem of dealing with the cut material which becomes a **controlled waste and must be sent to a licensed landfill facility** willing to accept this waste. Leaving the cut material to decompose in situ is not acceptable as it can re-grow thereby increasing the problem.

Himalayan Balsam. (HB)



Himalayan Balsam is an annual plant that reproduces from seed. As the seed pods ripen, they explode spreading the seeds for up to 7 meters.

Recommended methods of control.

1. Spraying using knapsack sprayer and systemic, glyphosate based herbicide. Roundup Pro Biactive is widely accepted as the most effective chemical suitable for use near watercourses. The main disadvantage to using herbicides to control any invasive weed is the unavoidable application to native plants growing in the immediate vicinity of the target species. Consequently, spraying is only recommended where HB forms large dense stands and **prior to flowering**.
2. Strimming and mowing of HB is effective **but only prior to the seed pods developing**. Any attempt to cut this plant once the seeds have developed will cause the seed pods to burst, spreading the plant. Strimming can be performed from spring to around early July.
3. Manual pulling. This is a slow technique only really suitable for low density infestations. Pulling should be performed **prior to the formation of seed pods**. The plant should be uprooted if possible as this ensures that new shoots can't develop. This method is highly suited to dealing with initial outbreaks of the species.

As HB is an annual and its seed viability is thought to be around two years, it can be eradicated in a relatively short period of time with sufficient effort. Strategic control from the upstream limit would be required to achieve this goal.

Giant Hogweed. (GHW)



The sap from this plant is dangerous to humans reacting with sunlight and causing severe blistering and recurring dermatitis. Consequently, no attempt should be made to trim plants. Mowing can also be dangerous and should be avoided.

Recommended methods of control.

1. Spraying using knapsack sprayer and systemic, glyphosate based herbicide. Roundup Pro Biactive is widely accepted as the most effective chemical suitable for use near watercourses.

Timing of spraying is important. Too early and many plants won't have emerged from the soil. Too late and plants may be flowering or have developed seed. Our experience in Ayrshire indicates that late March/ April until early June is an ideal time to spray. Early spraying has the added benefit that less chemical is required as the leaves are smaller and a more targeted approach is possible.

2. Cutting stems only delays flowering. For cutting to be effective, the plant should not have flowered and the **root should be cut through at least 50mm below the soil surface**. This method is only suitable where an individual plant occurs or where chemical application is not possible. Anyone cutting GHW should **wear adequate personal protective equipment** and be aware of all emergency procedures to follow should contact with the plant occur.

This method should only be used as a last resort.

3. Grazing. Grazing is not a substitute for other treatments but it may be used in certain circumstances to assist in control.