



## Rhododendron ponticum management

On some golf courses *Rhododendron ponticum* is present. This is a non-native and very invasive shrub, originally introduced to the UK as an ornamental species and for pheasant cover. Once it becomes established in woodland it suppresses natural regeneration, leading to loss of age and species diversity, and eventually leading to degeneration and long term loss of the woodland.

*Rhododendron ponticum* has great powers of vegetative spread. Woodland and watercourses are particularly vulnerable. Its striking flowers produce thousands of fertile seeds, and the plants themselves can quickly spread outward to colonise neighbouring land. Nothing will eat it and left unchecked the plant develops a dense canopy. This casts a deep shade and nothing can grow underneath it. The space available for native trees, flowers, mosses, lichens and other wildlife is then reduced.

It also seeds prolifically, with a large plant producing a million or so wind dispersed seeds every year. Wherever these germinate, they quickly form intimate mycorrhizal associations with specific bacteria which facilitate the absorption of nutrients from infertile soils, and encourage a typically densely branched system of fine roots, with the maximum capacity for dissolved mineral uptake. This feature gives *Rhododendron* an immediate competitive advantage over other species present. Bacteria of this kind also live in symbiotic relationships with other members of the family Ericaceae, such as Heather and Ling, allowing *Rhododendron* to rapidly overrun fragile heathland habitats. This advantage is maintained by an imperfectly understood allelopathic suppression of germination and growth of other plants, probably involving the inhibition of their own mycorrhizal bacteria. Allelopathy refers to the inhibition of growth of a plant due to biomolecules released by another. It is the opposite of symbiotic mutualism.

### Rhododendron Management

Even when *Rhododendron* is cleared from an area, the root-mat, mulch layer and soil (which will contain much rhododendron-derived material) hinders the germination of most other species for a

period of several years. This problem can be addressed by removal of the whole of this layer, which by reason of thin soil or other practical considerations, is often impossible. Foxgloves (*Digitalis purpurea*) is one of the few species that is able to resist the inhibitory effects of *Rhododendron ponticum*.

Chain saws, flails, mechanical diggers or hand tools can be used to physically remove *Rhododendron*. The huge costs in time and manpower of these types of operation can be partially mitigated by the willingness of conservation volunteers to go "Rhody-bashing". Such techniques, nevertheless, are obviously impracticable in many cases. It should also be noted that the ground disturbance often involved, whilst not removing the inhibitory litter layer, does provide the ideal conditions for the germination of *Rhododendron* seeds from the persistent seed bank.

Chemical controls, likewise have, in most cases, limited efficacy. It is easy to understand that the size of plants can impede foliar spraying, and penetration of the tough leaves, even with suitable adjuvants, may not allow lethal doses of herbicide to be absorbed. The reduction of the range of herbicides available is also a handicap; with one of the more effective chemicals, Imazapyr, being no longer permitted in the UK.

*Rhododendron* should be cut to ground level followed by chemical treatment of the stumps, and any regrowth sprayed off. The ammonium sulphamate based product 'Amcide' is effective in stump treatment, and the glyphosate product 'Roundup' used to spray any regrowth. This combined treatment has been found to be very effective for *Rhododendron* control.

Generally, *Rhododendron* is acceptable near the clubhouse as an ornamental shrub, however, care must be taken that it does not spread to woodland areas. On an old estate course, *Rhododendron* could well be considered an integral part of the lands history, so only control if rate of spread necessitates. *Rhododendron ponticum* and its hybrids, often referred to simply as rhododendron have been identified as a priority to tackle under Scotland's Species Action Framework ([www.snh.gov.uk/speciesactionframework](http://www.snh.gov.uk/speciesactionframework)).

Land managers can get funding through SRDP <http://www.gov.scot/Topics/farmingrural/SRDP> as rhododendron control can be expensive and time-consuming depending on its scale of invasion. People's efforts can also be at risk from seed blown from nearby plants, so cooperation with neighbouring land managers is advisable and more likely to attract funding.