

Best Practice Management Guidelines

Rhododendron
(Rhododendron ponticum)

and

Cherry Laurel
(Prunus laurocerasus)



1. Aim of this advice

This document provides best practice management guidelines on the control of *Rhododendron ponticum* and Cherry Laurel (*Prunus laurocerus*) on the island of Ireland.

2. Introduction

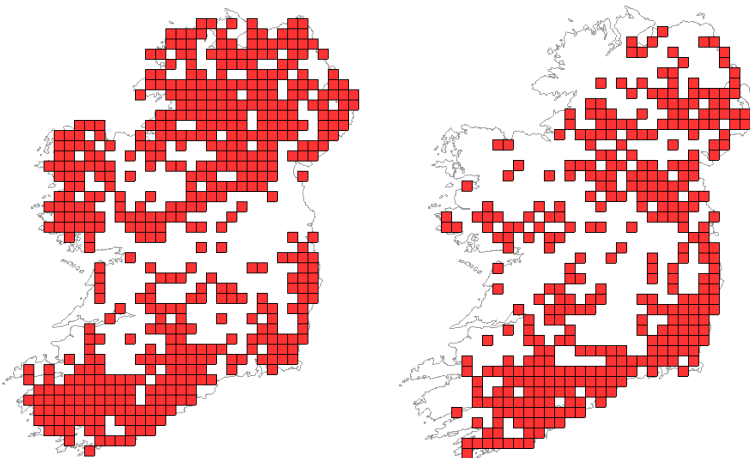
2.1. *Rhododendron*

Rhododendron is a large evergreen shrub (growing up to 8m tall) that was introduced to Ireland as an ornamental plant in the 18th Century from Asia and north-west China. There are more than 900 species of *Rhododendron*, but only one type, *Rhododendron ponticum* is invasive in Ireland. It has dark green waxy, oblong leaves and conspicuous pinkish purple or lilac flowers on 2-4cm stalks although hybrids and cultivated varieties can vary in colour. Flowering occurs in spring and summer with plants capable of producing large quantities of viable seed, which can persist to create a seed-bank in the soil. *Rhododendron* can also propagate itself by vegetative means, both by suckering from roots and by layering wherever branches touch the ground.

Rhododendron thrives on peaty, sandy and acidic soils and is extremely hardy. It is a very popular garden ornamental plant and has been extensively planted as game cover along the edges of fields and within woodlands. Its popularity, adaptability to Irish climate and soils along with its highly successful and multiple methods of reproduction and dispersal means that it has become naturalised and widespread. As *Rhododendron* is very shade tolerant, it has become widely established in several habitats, notably heathlands and woodlands from adjacent gardens.

2.2. Cherry Laurel

Cherry Laurel is a dense thicket forming invasive ever-green shrub of gardens, parks and woodlands from South West Asia. The leaves are thick and laurel-like, poisonous with cyanide, the white flowers are produced on upright spikes and are succeeded in autumn by blackish cherry-like fruits which should not be eaten.



Distribution of *Rhododendron ponticum* in Ireland (right) and Cherry Laurel (left). Source of data: National Biodiversity Network; accessed 07 April 2008.



2. Impacts

Rhododendron and Cherry Laurel are extremely invasive plant species, particularly in the more humid western parts of Ireland forming dense impenetrable thickets. Both species are unpalatable and likely toxic to mammals and probably invertebrates due to the presence of 'free' phenols and diterpenes in *Rhododendron* and cyanide in Cherry Laurel. They are both avoided by grazing animals, thus giving them significant advantages over native species. The deep shadow cast by the plants and toxic leaf litter accumulating underneath *Rhododendron* produces a dark sterile environment, which suppresses regeneration of native species and supports little wildlife. Changes in soil chemistry induced by *Rhododendron* have also been reported. Animal populations can also be negatively influenced by *Rhododendron* e.g. bird numbers are lower in mature oak woodlands dominated by *Rhododendron*.

In Ireland, *Rhododendron* has invaded three habitats of international importance under the EC Habitats Directive: upland oak woods, bogs and heath. For example, it is now a widespread invasive species in Killarney, where >650 acres of the Killarney National Park are completely infested.

Rhododendron in Ireland hosts a serious plant health pathogen *Phytophthora ramorum*. This is a fungus that has the potential to attack a wide variety of native woody plants and is the causative agent of 'Sudden Oak Death'. On *Rhododendron*, the first indication of the disease is wilting of shoots. These develop a brown/black colour that spreads along the twig and can move onto the leaves, where the leaf bases and tips blacken. The fungus has been recorded in Northern Ireland and DARD has identified this species as likely to cause significant damage to trees and landscapes if it establishes widely. Consequently, *Rhododendron* is one of the biggest conservation issues facing Irish woodlands today.

There are reported cases of human poisoning by 'toxic' honey from *Rhododendron*. The severity of the reaction probably relates to the amount of affected honey digested and the health and susceptibility of the individual concerned.

3. Legal status

There are no specific legal provisions associated with growing of *Rhododendron* or Cherry Laurel on the island of Ireland. However, all management methods described here should be carried out with due care and attention, with particular consideration to health and safety requirements and, where necessary, by trained and competent personnel. All waste not dealt with on site should be taken to a licensed landfill site.

Under the EU Plant Health Directive, emergency legislation was introduced in 2002 to prevent the introduction and spread of *Phytophthora ramorum* within the EU. If suspicious symptoms are observed on *Rhododendron* or any other tree species, the Forest Service (ROI) / DARD (NI) should be informed.



4. Managing *Rhododendron* and Cherry Laurel

The management and eradication of *Rhododendron* and Cherry Laurel is challenging. Understanding the ecology of the species and carefully planning clearance work will ensure success. Clearance can be expensive and time consuming, and should be well planned before any action is taken.

5. Control and eradication

Three main issues must be considered when planning management/control. These are:

- *Rhododendron* in Ireland is a prolific seed producer. However, a naturally seeded plant does not flower and produce seed until at least 10-12 years old. This provides a window of opportunity to prevent serious infestation, through the immediate removal of young plants.
- *Rhododendron* regrows vigorously when cut. As a result, some method of stump killing or removal is always necessary. Any untreated cut stump will regrow and in most cases flower within 3-4 years.
- The scale and nature of the site infestation. Adjacent garden/land owners should be encouraged to control *Rhododendron* at the same time as clearance on your site.



6. *Rhododendron* and Cherry Laurel on adjacent sites

It is important to consider populations in the wider environment around the site. If *Rhododendron* is growing profusely on adjacent land, or upstream, then recolonisation of recently cleared sites is possible. Discussion with neighbouring land owners on the issues involved and your intended actions, may help encourage them to remove or not plant *Rhododendron* and Cherry Laurel as ornamental or hedging species.

For all sites, the following six steps may be useful to ensure success:

1. Find out how much *Rhododendron* and/or Cherry Laurel there is on the property and map it if possible.
2. Note the age, condition and previous treatments at your site. Use this information to guide your control programme.
3. Areas should be prioritised. It may be easier to clear less heavily infested areas to begin with or sites where seed production has not yet occurred. Also, ideally work with prevailing wind direction, rather than against it, to help minimise seed dispersal into recently cleared areas.
4. Create suitable conditions for the recovery of native ground flora. This will reduce open areas for recolonisation.
5. Write a Management Plan to guide your work. Including timeframes for planned clearance and repeated treatments.
6. Follow-up work will be necessary to ensure that any small plants and seedlings have not been missed.



7. Treatment options

Treatment programmes can be divided into 3 main stages: initial removal, control of stems and roots, and follow up. The following treatment options have been widely tested and measured for effectiveness across Ireland. In almost all cases, failures can be accredited to poor application of a particular technique and/or logistical difficulties, rather than the control method itself. Care should be taken when embarking on a control programme and resources should be identified and allocated for repeated treatments.

8. Successfully managing *Rhododendron*

Cut and remove stems by hand or chainsaw, cutting as close to the ground as possible to remove above ground growth. Chip or remove the cut material from the area to allow for effective follow-up work and prevent regrowth. Chipped material can provide good weed barrier around ornamental garden areas. Flailing has also been effectively used in Ireland to treat young or immature growth. Although not suitable on all sites and locations, especially steeply sloping or wet sites, it is very effective as it breaks up woody stems upon contact.

The removal of above ground growth will not prevent regrowth as *Rhododendron* will regrow from cut stems and stumps. There are four recommended methods to achieve successful management after the initial cut and removal:

1. Digging the stumps out. The effectiveness of this technique is increased by removing all viable roots. This can be done manually or with a tractor and plough. To avoid regrowth, stumps should be turned upside down and soil should be brushed off roots.
2. Direct stump treatment by painting or spot spraying freshly cut low stumps with a herbicide immediately after been cut. Glyphosate (20% solution), triclopyr (8% solution) or ammonium sulphate (40% solution) are known to be effective during suitable weather conditions i.e. dry weather. The herbicide concentrations used and timings of applications vary according to which chemical is used. Use of a vegetable dye is recommended to mark treated stumps and all stumps should be targeted. A handheld applicator will help avoid spray drift onto surrounding non-target species. Always read the label and follow the manufacturers guidelines when using herbicides. Remember that using
3. A variation on the stump treatment method is stem injection, using a 'drill and drop' methodology, whereby, if the main stem is cut and is large enough for a hole to be drilled into it, the hole can be used to facilitate the targeted application of glyphosate (25% solution). The main drawback is that the dead *Rhododendron* may persist in situ for 10-15 years.
4. Stump regrowth and seedlings can be effectively killed by spraying regrowth with a suitable herbicide, usually glyphosate. Best practice spraying protocols should be carefully followed. General broadcast spraying is not as effective as stump spot treatment and has the potential to impact on surrounding non-target species. *Rhododendron* leaves are thick and waxy. For herbicide treatment to be effective **each individual leaf needs be thoroughly wetted with herbicide to kill the plant.**

Remember: If the initial infestation was of flowering age or a seed source is nearby, then follow-up seedling removal work will be necessary. The intensity of this work will vary according to the severity and duration of infestation.

9. *Rhododendron*/Cherry Laurel Management Plan Template

Use this template to help formulate your own management plan outlining how you are going to proceed and what you will need.

Site Name: _____

Site Manager/Owner: _____

Site details

Address:	
Telephone:	
Email:	
Agencies/persons involved:	
Date:	
Date of introduction:	
Total site area:	
Total area colonised:	
Previous site management:	

Designation	On site	Near site	None present
Details: Establish if there is a requirement to apply for a license/notify before proceeding with plan.			

Actions and resources

Management options	Responsibility	Date to undertake

Resources needed	Responsibility	Date to undertake

Monitoring and evaluation

Name of person/s	Date to undertake	Report to	Additional treatments date (if required)



10. Summary of actions needed for effective management

1. Confirm *Rhododendron*/Cherry laurel identification.
2. Carry out a survey and produce a distribution map indicating the location across the site.
3. Consider surrounding properties and potential for reintroduction. Talk to adjacent land owners. Identify potential contamination routes to your site and mitigate against these.
4. Decide should the programme aim for continuous control on a yearly basis or eradication from the site. Base your decision on an understanding of the biology, size of infestation, potential for reintroduction and other relevant sensitivities in the area. Once management has begun, do not allow any plant to flower and set seed within areas that have undergone initial clearance.
5. Consider if you can successfully and safely carry out the work or if professional practitioners, with relevant training and certificates should undertake the work.
6. Identify if sufficient resources are/will be available to complete the work within the planned timescale. If work will take more than 1 year to complete, ensure you have sufficient funds to complete the work.
7. Ensure disposal options for plant material are in place prior to work commencing.
8. Develop and produce a site specific control/management plan. Use the template provided in this document to guide you.
9. Monitor for regrowth and/or reintroduction during site visits. If applicable, ensure new members of staff are aware of your *Rhododendron*/Cherry Laurel plan and report sightings.

12. *Rhododendron* and Cherry Laurel treatment times

Cutting	J	F	M	A	M	J	J	A	S	O	N	D
Glyphosate	J	F	M	A	M	J	J	A	S	O	N	D
Tryclopypyr*	J*	F*	M*	A*	M*	J*	J*	A*	S*	O*	N*	D*
Ammonium sulphate	J	F	M	A	M	J	J	A	S	O	N	D

- Optimum treatment time. Remember to consider breeding birds before embarking on a programme.
- Suboptimum treatment time but can be effective. In the case of glyphosate based herbicides consider higher concentrations 25--100% during this time period.
- * Suitable for treatment any time after cutting and appearance of new growth.

Please consider sharing your experience undertaking a management plan with others. The Invasive Species Ireland website will feature case studies to help guide others under taking similar work.

The Invasive Species Ireland Project is undertaken, in partnership, by EnviroCentre and Quercus.



www.envirocentre.co.uk



www.quercus.ac.uk

and is funded by the National Parks and Wildlife Service and the Northern Ireland Environment Agency.



www.ni-environment.gov.uk



www.npws.ie

For more information on the Invasive Species Ireland Project please see the website at www.invasivespeciesireland.com