Rhododendron ponticum **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Ericales	Ericaceae

Common name rhododendron (English), Pontian rhododendron (English), common rhododendron (English)

Synonym *Rhododendron speciosum* , (Willd.) Sweet.
Rhododendron lancifolium , Moench

Similar species

Summary *Rhododendron ponticum* often simply called rhododendron, is an evergreen shrub that has been widely cultivated as an attractive ornamental species. In ideal conditions *R. ponticum* can form dense stands which can inhibit the regeneration of native species and alter plant and animal communities. Control of *R. ponticum* is best achieved using a combination of physical and chemical methods, however this is usually an expensive and labour intensive process due to the high numbers of wind dispersed seed produced and the ability to resprout vigorously from its stumps and roots.

view this species on IUCN Red List

Habitat Description
Rhododendron ponticum is tolerant to a wide range of temperatures and to shade, but is intolerant to drought; it grows best in uniformly damp climates (Hulme, 2006; Maguire *et al.*, 2008). *R. ponticum* is capable of thriving on peaty, sandy or acidic soils (Maguire *et al.*, 2008) and while seedling recruitment is inhibited in areas where there is an existing continuous ground cover by native species, *R. ponticum* is able to establish readily in disturbed areas where a gap is present (Hulme, 2006). Distribution modelling has shown that fallen logs or tree stumps with light moss levels also provide establishment opportunities for *R. ponticum* in areas of existing ground cover (Stephenson *et al.*, 2006).

Management Info
Preventative measures: Preventing the establishment of *Rhododendron ponticum* should vary according to the major colonising strategy in the area and may include eradication of seed sources, minimising soil disturbance, reducing moss formation, relaxing fire exclusion policies and preserving plant cover (Esen *et al.*, 2006a); or the regulation and planning of forest activities to reduce disturbance levels (Colak, 1997; in Esen *et al.*, 2006a).
Prioritisation: Prioritisation of control sites is important for the long term control of *R. ponticum* with different best practice guides recommending he prioritisation of different infestation types based on the age and condition of the infestation and nearby seed sources (Barron, undated; Edwards, 2006).
Physical control: Physical control can include the hand pulling of seedlings and smaller plants, which may involve the use of handtools (Edwards, 2006). Above ground material can also be removed with handtools or chainsaws with cut material either removed, chipped or burnt to enable necessary follow up work to continue (Barron, undated; Edwards, 2006; Maguire *et al.*, 2008). Heavy machinery can also be used to removed material, and while faster, it requires road access, is expensive and may cause damage to the soil and environment (Walter, 2005; Esen *et al.*, 2006a; Maguire *et al.*, 2008). Follow up treatments are always required for the stumps of *R. ponticum* as resprouting will occur otherwise (Edwards, 2006). In terms of physical control, this can be achieved by digging out the stumps either by hand or with heavy machinery and can be a very labour intensive process (Barron, undated; Maguire *et al.*, 2008).
Chemical control: Stumps of *R. ponticum* are more commonly treated with herbicides with a number of different applications including painting or spraying freshly cut stumps and stem injection techniques; foliar application through spraying or weed wiping is also possible and are preferred in some situations (Walter, 2005; Edwards, 2006; Maguire *et al.*, 2008). There are a number of different herbicides used at different rates which may be used successfully, their use and the application method utilised depending on a number of factors (Edwards, 2006)
Biological control: The indigenous wood-rotting fungus *Chondrostereum purpureum* has been recognised as a potential bioherbicide option in the UK, allowing for the controlled distribution of a biological control agent without the risk of harming other cultivated, ornamental and non-invasive *Rhododendron* species (Green, 2003).
Please follow this link for details on the management and control of *Rhododendron ponticum*.

Pathway
Rhododendron ponticum has been widely distributed in the British Isles as an ornamental plant (Dehnen-Schmutz, *et al.*, 2004). *Rhododendron ponticum* was used as a rootstock species for less hardy *Rhododendron* species and cultivars (Edwards, 2006).*Rhododendron ponticum* was historically planted as game cover in woodland habitats as a suitable habitat for pheasants (Dehnen-Schmutz, *et al.*, 2004).

Principal source:

Compiler: IUCN SSC Invasive Species Specialist Group (ISSG) with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

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[1] AUSTRIA
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[1] NEW ZEALAND
[1] UNITED KINGDOM

BIBLIOGRAPHY
47 references found for **Rhododendron ponticum**

Managment information

Barron, Chris, (n.d) The Control of Rhododendron in Native Woodlands. (ed.) Declan Little. Native Woodland Scheme Information Note No. 3. Forest Service Woodlands of Ireland.
Summary: Available from: http://www.woodlandsofireland.com/docs/No%5B1%5D._3_Rhodo.pdf [Accessed 27 July 2010]
Bremner, Alison; Park, Kirsty, 2007. Public attitudes to the management of invasive non-native species in Scotland. Biological Conservation. 139(3-4). OCT 2007. 306-314.
Dehnen-Schmutz, Katharina; Perrings, Charles; Williamson, Mark, 2004. Controlling *Rhododendron ponticum* in the British Isles: an economic analysis. Journal of Environmental Management. 70(4). April 2004. 323-332.
Dehnen-Schmutz, Katharina; Touza, Julia; Perrings, Charles; Williamson, Mark, 2007. A century of the ornamental plant trade and its impact on invasion success. Diversity & Distributions. 13(5). SEP 2007. 527-534.
Dixon, F. L.; Clay, D. V., 2002. Imazapyr application to *Rhododendron ponticum*: Speed of action and effects on other vegetation. Forestry (Oxford). 75(3). 2002. 217-225.
Dixon, F. L.; Clay, D. V., 2003. Susceptibility of *Rhododendron ponticum* to low doses of imazapyr and glyphosate. Tests of Agrochemicals & Cultivars.(24). December 2003. 8-9.
Edwards, C. 2006. Managing and controlling invasive rhododendron. Forestry Commission Practice Guide. Forestry Commission, Edinburgh. i–iv + 1–36 pp.
Summary: Available from: http://www.forestry.gov.uk/pdf/fcpg017.pdf/$FILE/fcpg017.pdf [Accessed 27 July 2010]
Esen, Derya; Erik T. Nilsen; Oktay Yildiz, 2006. 43: Ecology, Competitive Advantages, and Integrated Control of *Rhododendron*: An Old Ornamental yet Emerging Invasive Weed Around the Globe. In Floriculture, Ornamental and Plant Biotechnology Volume III Global Science Books
Summary: Available from: http://www17.plala.or.jp/gsbjapan/images/Vol3_sample.pdf [Accessed 27 July 2010]
Esen, Derya; Yildiz, Oktay; Kulac, Semsettin; Sarginci, Murat, 2006. Controlling *Rhododendron* spp. in the Turkish Black Sea Region. Forestry (Oxford). 79(2). APR 2006. 177-184.
Esen, Derya; Zedaker, Shepard M., 2004. Control of rhododendron (*Rhododendron ponticum* and *R. flavum*) in the eastern beech (*Fagus orientalis*) forests of Turkey. New Forests. 27(1). January 2004. 69-79
Green, S., 2003. A review of the potential for the use of bioherbicides to control forest weeds in the UK. Forestry (Oxford). 76(3). 2003. 285-298.
Harris, C. M.; Park, K. J.; Atkinson, R.; Edwards, C.; Travis, J. M. J., 2009. Invasive species control: Incorporating demographic data and seed dispersal into a management model for *Rhododendron ponticum*. Ecological Informatics. 4(4). SEP 2009. 226-233.
Invasive Species Ireland, (n.d) Best Practice Management Guidelines. Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*)
Summary: Available from: http://www.invasivespeciesireland.com/files/public/BPM%20Guidance/Rhododendron%20BPM.pdf [Accessed 27 July 2010]
IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.
Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.
Kirdar, Erol; Ertekin, Murat, 2009. Chemical effects on controlling of *Rhododendron ponticum* L. in western black sea forest region of Turkey. African Journal of Biotechnology. 8(8). APR 20 2009. 1488-1496.
Lawrie, J.; Clay, V., 1993. Effects of herbicide mixtures and additives on *Rhododendron ponticum*. Weed Research. 33(1). 1993. 25-34.
Liley D., 2005a. Comparison of two chemicals used to control rhododendron *Rhododendron ponticum* at Blackhill, Dorset, England. Conservation Evidence (2005) 2, 129
Summary: Available from: http://conservationevidence.regulus.titaninternet.co.uk/Attachments/PDF198.pdf [Accessed 27 July 2010]
Liley D., 2005b. Mechanical clearance of Scots pine *Pinus sylvestris* and rhododendron *Rhododendron ponticum* from lowland heathland at Hurn, Dorset, England
Summary: Available from: http://conservationevidence.regulus.titaninternet.co.uk/Attachments/PDF188.pdf [Accessed 27 July 2010]
Mitchell, R. J.; Auld, M. H. D.; Hughes, J. M.; Marrs, R. H., 2000. Estimates of nutrient removal during heathland restoration on successional sites in Dorset, southern England. Biological Conservation. 95(3). October, 2000. 233-246.
Mitchell, R. J.; Marrs, R. H.; Auld, M. H. D., 1998. A comparative study of the seedbanks of heathland and successional habitats in Dorset, Southern England. Journal of Ecology. 86(4). Aug., 1998. 588-596.
Mitchell, R. J.; Marrs, R. H.; Le Duc, M. G.; Auld, M. H. D., 1999. A study of the restoration of heathland on successional sites: Changes in vegetation and soil chemical properties. Journal of Applied Ecology. 36(5). Oct., 1999. 770-783.
Pullin, Andrew S.; Stewart, Gavin B., 2006. Guidelines for systematic review in conservation and environmental management. Conservation Biology. 20(6). DEC 2006. 1647-1656.
Stephenson, Catriona M.; Kohn, Deborah D.; Park, Kirsty J.; Atkinson, Rachel; Edwards, Colin; Travis, Justin M., 2007. Testing mechanistic models of seed dispersal for the invasive *Rhododendron ponticum* (L.). Perspectives in Plant Ecology Evolution & Systematics. 9(1). 2007. 15-28
Stephenson, C. M.; MacKenzie, M. L.; Edwards, C.; Travis, J. M. J., 2006. Modelling establishment probabilities of an exotic plant, *Rhododendron ponticum*, invading a heterogeneous, woodland landscape using logistic regression with spatial autocorrelation. Ecological Modelling. 193(3-4). MAR 15 2006. 747-758.
Stokes, K. E.; O Neill, K. P.; Montgomery, W. I.; Dick, J. T. A.; Maggs, C. A.; McDonald, R. A., 2006. The importance of stakeholder engagement in invasive species management: A cross-jurisdictional perspective in Ireland. Biodiversity & Conservation. 15(8). JUL 2006. 2829-2852.

Tyler, Claire; Pullin, Andrew S.; Stewart, Gavin B., 2006. Effectiveness of management interventions to control invasion by *Rhododendron ponticum*. Environmental Management. 37(4). APR 2006. 513-522.
Walter M., 2005. Rhododendron *Rhododendron ponticum* control by mulching, cutting and herbicide application at Blean Woods RSPB Reserve, Kent, England. Conservation Evidence (2005) 2, 39-40
Summary: Available from: http://www.conservationevidence.com/Attachments/PDF129.pdf [Accessed 27 July 2010]
Weber , Ewald & Daniel Gut, 2004. Assessing the risk of potentially invasive plant species in central Europe. Journal for Nature Conservation 12 (2004) 171&#65533;179
Yildiz, O.; Esen, D., 2006. Effects of different *Rhododendron* control methods in eastern beech (*Fagus orientalis* Lipsky) ecosystems in the western Black Sea region of Turkey. Annals of Applied Biology. 149(2). 2006. 235-242.

General information

Cross, J. R, 1981. The establishment of *Rhododendron ponticum* in the Killarney Oakwoods Southwestern Ireland. Journal of Ecology. 69(3). 1981. 807-824.
Erfmeier, Alexandra; Bruelheide, Helge, 2004. Comparsion of native and invasive *Rhododendron ponticum* populations: Growth, reproduction and morphology under field conditions. Flora (Jena). 199(2). 2004. 120-133.
Erfmeier, Alexandra; Bruelheide, Helge, 2010. Invasibility or invasiveness? Effects of habitat, genotype, and their interaction on invasive *Rhododendron ponticum* populations. Biological Invasions. 12(3). MAR 2010. 657-676.
Hosking, John R.; Conn, Barry J.; Lepschi, Brendan J., 2003. Plant species first recognised as naturalised for New South Wales over the period 2000-2001. Cunninghamia. 8(2). December 2003. 175-187.
Hulme, Phil, 2006. *Rhododendron ponticum*- DAISIE (Delivering Alien Species Inventories for Europe)
Summary: Available from: http://www.europe-aliens.org/pdf/Rhododendron_ponticum.pdf [Accessed 27 July 2010]
Kelly, L. Daniels, 1981. The native forest vegetation of Killarney, South-West Ireland an ecological account. Journal of Ecology (1981) 69, 437-472
Summary: Available from: [Accessed 27 July 2010]
Milne, Richard I.; Abbott, Richard J., 2000. Origin and evolution of invasive naturalized material of *Rhododendron ponticum* L. in the British Isles. Molecular Ecology. 9(5). May, 2000. 541-556.
Milne, Richard I.; Abbott, Richard J.; Wolff, Kirsten; Chamberlain, David F., 1999. Hybridization among sympatric species of *Rhododendron* (Ericaceae) in Turkey: Morphological and molecular evidence. American Journal of Botany. 86(12). Dec., 1999. 1776-1785.
Mitchell, R. J.; Marrs, R. H.; Le Duc, M. G.; Auld, M. H. D., 1997. A study of succession on lowland heaths in Dorset, southern England: Changes in vegetation and soil chemical properties. Journal of Applied Ecology. 34(6). Dec., 1997. 1426-1444.
Niinemets, U.; Valladares, F.; Ceulemans, R., 2003. Leaf-level phenotypic variability and plasticity of invasive *Rhododendron ponticum* and non-invasive *Ilex aquifolium* co-occurring at two contrasting European sites. Plant Cell & Environment. 26(6). June 2003. 941-956.
Stout, Jane C., 2007. Reproductive biology of the invasive exotic shrub, *Rhododendron ponticum* L. (Ericaceae). Botanical Journal of the Linnean Society. 155(3). NOV 2007. 373-381.
Stout, Jane Catherine, 2007. Pollination of invasive *Rhododendron ponticum* (Ericaceae) in Ireland. Apidologie. 38(2). MAR-APR 2007. 198-206.
Stout, Jane C.; Parnell, John A. N.; Arroyo, Juan; Crowe, Tasman P., 2006. Pollination ecology and seed production of *Rhododendron ponticum* in native and exotic habitats. Biodiversity & Conservation. 15(2). FEB 2006. 755-777.
Sutton, Chris A.; Wilkinson, David M., 2007. The effects of Rhododendron on testate amoebae communities in woodland soils in north west England. Acta Protozoologica. 46(4). 2007. 333-338.
Thomson, A. G.; Radford, G. L.; Norris, D. A.; Good, J. E. G., 1993. Factors affecting the distribution and spread of Rhododendron in North Wales. Journal of Environmental Management. 39(3). 1993. 199-212.
USDA-ARS, 2010. Taxon: *Rhododendron ponticum* L. National Genetic Resources Program. Germplasm Resources Information Network - (GRIN) [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.
Summary: Available from: http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?31511 [Accessed 27 July 2010]
Usher, M. B., 1986. Invasibility and Wildlife Conservation: Invasive Species on Nature Reserves. Philosophical Transactions of the Royal Society of London B Biological Sciences. 314(1167). 1986. 695-710.
Vila, Montserrat; Bartomeus, Ignasi; Dietzsch, Anke C.; Petanidou, Theodora; Steffan-Dewenter, Ingolf ; Stout, Jane C.; Tscheulin, Thomas, 2009. Invasive plant integration into native plant-pollinator networks across Europe. Proceedings of the Royal Society Biological Sciences Series B. 276(1674). NOV 7 2009. 3887-3893.