

## PLANFORBIO

## RHODO

## Achieving effective Rhododendron control

**PROJECT TEAM**

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**BACKGROUND**

Humans have introduced a large number of alien plant and animal species into local habitats. In many cases conditions permit these species to become invasive and impact on the habitat's integrity. Foremost among alien invasive species in Ireland in terms of area covered, density and resulting sterilising effect is *Rhododendron ponticum* L. Rhododendron invades several Annex 1 habitats in Ireland and direct control is required to maintain these habitats in 'favourable conservation status'. This project aims to develop tools for the planning of landscape level control programmes and to transfer the experience gained to other practitioners and environments. It also aims to develop cost-effective methods for reduction or elimination of herbicides, particularly in conservation areas.

**OBJECTIVES**

- Increase knowledge of rhododendron invasion.
- Ascertain the effectiveness of reducing rhododendron natural regeneration post-clearance.
- Survey and collect any indigenous pathogens adversely affecting rhododendron in Ireland.
- Isolate these pathogens and test them under laboratory conditions with a view to using them in the future as bioherbicides.
- Run workshops during and at the end of the project on rhododendron control.
- Produce national policy recommendations based on the findings of the project.

**PROGRESS**

Key research questions have been identified and experimental protocols are being devised to answer them. Following extensive literature searches five research areas were selected for detailed investigation during this project:

- Investigate the development of a bio-control for rhododendron;
- Development of an aging key for rhododendron;
- Reducing rhododendron reinvasion post-clearance;
- Calorific value of rhododendron;
- Seed longevity and viability.

Two sites have been selected for the reinvasion experiment to give as much vegetation type variation as possible. Castlelands in Lismore, Co Waterford, has been chosen as one site. This is an 8 ha broadleaf forest consisting of mature oak with an understorey of rhododendron, *Prunus laurocerasus* and some *Ilex aquifolium*. The second site selected is Nephin forest (Coillte-owned forest) outside Newport, Co Mayo. At the request of the Marine Institute (who have a research facility adjoining the property), the site was not replanted following harvesting 10 years ago and rhododendron has since invaded the site. Nephin forest is a peatland site.

The RHODO team will also collaborate with CABI (Centre for Agricultural Bioscience International) UK to isolate some of the fungi that may have potential for future use as a mycoherbicide. The investigation into innovative fungal isolates on rhododendron to inform the development of bioherbicide agents for its control will be carried out in two phases. The first will be the survey and collection of pathogens affecting rhododendron and subsequent isolation of the pathogens in the laboratory. The second stage will be concerned with the inoculation of young rhododendron plants with some of these fungal isolates under laboratory conditions to study their effects and ascertain whether there is potential for use as bioherbicides.



*Rhododendron ponticum* in flower.

### ACTIVITIES PLANNED

Collaboration with CABI on the identification of fungi with potential for use as mycoherbicides will commence in January 2009 when a member of CABI UK will visit WIT to work with the team.

Experimental protocols will be finalised and work will begin with seed viability tests and growth rate measurements when they ripen in early 2009.

Calorific value, moisture content and bulk density of rhododendron biomass will be ascertained during the first half of 2009.

Work on establishing the re-invasion sites will be conducted between January and April.

Outreach will commence with presentations at national and international meetings.

### OUTPUTS

Irwin, S., Kelly, D. L., Kelly, T., McCarthy, N., Mitchell, F., Coote, L., Oxbrough, A., Wilson, M., Martin, R., French, V., Fox, H., Sweeney, O., Moore, K. and O'Halloran, J. 2008. Planning and management tools for biodiversity in a range of Irish forests. (Poster presentation). ENVIRON 2008, DkIT.

*Project website:*

<http://www.ucc.ie/en/planforbio/Projects/RHODO/>