

***RHODODENDRON PONTICUM* IN THE SCOTTISH HIGHLANDS AND BEYOND**

a personal appraisal of an ecological ‘time bomb’

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INTRODUCTION

Rhododendron ponticum can no longer be regarded as an occasional or attractive curiosity in the Scottish – indeed the entire British – countryside. It is now recognised to be one of our most invasive and harmful alien weeds, though this is not widely known by people without a specific interest in ecology, wildlife and conservation. The situation described below is applicable to many parts of Scotland as well as the rest of Britain and Ireland.

Rhododendron is one of the greatest threats to the sustainability of woodland, heath, moorland and even commercial forest environments.

The threat is so severe that Forestry Commission Scotland - together with SNH and Loch Lomond & the Trossachs National Park, has appointed a dedicated control officer, Liz Poulson. Ms Poulson will advise landowners on how to control the problem with Scottish Government grants to support rhododendron control projects through the Scottish Rural Development Programme.

She said in a statement: "Rhododendron ponticum is a non-native invasive shrub that can spread rapidly through woodlands and out into open moorland. It already covers around 4,400 hectares in mainland Argyll alone and is present across Scotland. It is already posing a concern for protected habitats as far east as Angus.

"The bushes shade out lower ground flora and suppress the regeneration of tree seedlings but they also host two fungal infections that can have a negative impact on the surrounding environment and on biodiversity.

"If left unchecked this species could do a lot of damage to Scotland's important native woodlands so we need to take severe and urgent action."

STV, 10 June 2009

<http://news.stv.tv/scotland/101599-action-against-invasive-rhododendron-menace/>

That this invasive rhododendron constitutes a significant threat to the countryside that urgently requires action is now, demonstrably, beyond any doubt. It is likely that complete eradication will be the only satisfactory remedy and, although that should not be impossible, it will not be an easy task (to say the least).

OPTIONS

There are four choices how we might proceed:

- 1. Ignore or deny the severity of the rhododendron problem and make no attempt to control it.**

Pretend that rhododendron is not a problem and accept the readily predictable and potentially very discouraging (appalling) consequences.

2. Maintain the *status quo*

Prevent rhododendron from spreading, but make no attempt to remove it, where it has become established.

3. Targeted control

According to severity.

According to funds and other resources.

According to public and statutory motivation.

According to land owners' understanding, attitudes and wishes.

4. Eradication

Local, Skye & Lochalsh and other regions

Co-ordinated with nearby biodiversity groups.

Co-ordinated, Highland wide.

Co-ordinated nationwide.

[All are highly dependent upon categories in 3 above.]

DISCUSSION

- 1. IGNORING** the problem – head in bucket of sand – will not diminish it or its potentially detrimental impact. There is sufficient evidence that *R. ponticum* is a highly invasive plant which can, if not tackled, take over entire tracts of land, virtually eliminating native wildlife, creating a uniform rather than diverse landscape and reducing to zero any potential for agriculture. Benefits? A display of pretty flowers in early summer, shelter that could be found elsewhere for badgers and otters, and game cover, with a little financial spin-off for tourism and a small number of landowners. It should be unnecessary to say more.
- 2. THE STATUS QUO** would be impossible to determine, let alone maintain, so it is, therefore, no more viable an option than no. 1 above. *R. ponticum* is highly invasive and there are many sites where it has either taken over large tracts of land already or colonisation has reached a stage from which it can be confidently predicted that that process will inevitably happen if the invader is left unchecked. This can be seen on the Hillside above Torridon Inn and Hotel and at countless other sites, and can be very adequately demonstrated at Carnmore, Badicaul (Kyle), the extensive, semi-wild property belonging to Highland Councillor Dr Audrey Sinclair. [By kind permission of Cllr Sinclair, a demonstration of the problem and rhododendron control methods is being planned, to take place at Carnmore in September or October this year. Representatives of all interested organisations will be invited.]
- 3. TARGETED CONTROL**, removing the worst stands or giving up on the worst and concentrating on less severely affected or potential invasion sites, would seem to be economically attractive, but any *R. ponticum* left by such schemes would soon increase in size and density and spread by seed, probably growing particularly well in areas that have been cleared. If *R. ponticum* is left to its own devices it simply proliferates. At best, targeted control would simply delay the inevitable: land swamped by a single alien species.
- 4. ERADICATION** would seem to be the only option, other than ignoring the problem and accepting the consequences, which is unthinkable (cowardly). If it

were carried out on regional scale only (e.g. Skye & Lochalsh, Wester Ross, Lochaber) it seems likely that, even if successful, invasion from adjacent regions would eventually reinstate the problem. It might seem a bold or even impossible aspiration, but – no half measures – ideally Britain and Ireland should be relieved entirely of *R. ponticum*. Piecemeal removal is unlikely to result in anything other than temporary relief from the weed, which would undoubtedly re-infest susceptible land, seeded from residual populations unless constantly monitored.

Therefore, it is suggested that: 1. either regions radiating from e.g. that covered by Skye & Lochalsh Environment Forum (S&LEF), should take the lead and collaborate with their neighbours, hoping that a collaboration ‘bush’ will branch out across the Highlands and beyond; or 2. the Highland Council’s Biodiversity Partnership should co-ordinate the entire programme, similarly collaborating with their adjacent equivalents. Ideally, the regional leader should communicate with other organisations nationwide in whatever way is best to stimulate the establishment of a national rhododendron eradication campaign (if this process is not already in progress, perhaps emanating from North Wales where the problem has been recognised and is being fought with the blessing of, and indeed by, local people).

However, an eradication programme would be fraught with difficulties (‘challenges’), for example:

- **The extent and intricacy of the problem.** The problem of *R. ponticum* in Skye and Lochalsh, indeed in many parts of the Highlands, is extensive. There are places where many hectares of land are completely overrun with the plant, sometimes in monoculture, or soon will be – there are plenty of sites where potential spread and density increase are plain to see. There are thousands of sites where land invasion by *R. ponticum* is already under way but not easily perceived and there are also millions of individual bushes, saplings and seedlings in countryside and gardens any of which, individually or corporately could become the source of major invasions (not to mention swathes of bushes hidden deep in woodland, coniferous plantations and private estates, as well as in isolated places on remote hillsides, inaccessible cliffs and in steep-sided gullies).

There is no better way of appreciating the severity of invasive species than to go to somebody else’s country and witness their problem invaders. The British ‘gift’ to the USA of purple loosestrife can be seen in the Midwest forming huge stands far worse even than what we have in the UK of Rosebay Willow Herb, itself the cause of anxiety. The Australian recurrent rabbit plague is well enough known, as are rat infestations on Pacific islands which have caused extinctions of native species, and the lamentable state of New Zealand under a welter of invasives. Recognition of these and others is creeping into our corporate consciousness, but who has seen even pictures of the Japanese Kudzu vine (right) entirely blanketing land, homes and stationary vehicles in the USA, even forests and hills? If first you witness Kudzu in, say, North Carolina (absolutely gorgeous when in flower, like value-added Wisteria,



and its honey is delicious) and then observe a dense stand of *R. ponticum* at home, *then* you can appreciate what trouble we already have and can predict, without any unfair influence from other people, the awfulness we might have to face in the future.

Invasion by a host of alien species is at an advanced stage throughout the world, a fact that is unknown to the majority of people. It is not certain that we can stem the tide and the consequences predicted are various and our understanding of them uncomfortably inconclusive. When provided with information about invasives, many people shrug and assert their indifference: “What’s all the fuss about?” If there are no foolproof remedies, there is plenty of information available and it is not difficult to illustrate the problem, particularly if you show people the real thing in their ‘back yard’. The rhododendron, Japanese knotweed etc. problems are right in or not far away from most people’s back yards, so we can show them whilst explaining clearly why they should care and participate.

- **The amount of work required will be prodigious**, but it must be done if we are to salvage and protect some of the best parts of our already highly degraded countryside. The programme will require courage and a steadfast, informed sense of purpose. *R. ponticum* covers many large tracts of land in Britain and Ireland. These will all need first to be identified, then comprehensively surveyed before work can begin. This is a major priority so that the extent of the problem can be accurately recorded.

Meanwhile deterioration of natural and semi-natural habitats will continue at an alarming pace with the extent of the problem remorselessly increased and restoration delayed or, viewed more realistically, in many places prevented. Even if eradication could begin now, the task before us is already immense and worsening rapidly.

- **Massive funding** will be required because eradication of invasive species is time, training and labour intensive. In addition to any preparatory awareness raising, vigilance after the event is essential so that any sources of colonisation that remain – bushes and seedlings that, for various predictable and acceptable reasons, will get omitted by the most diligent of surveys – will, when they become conspicuous, have to be identified and removed. Both before and after activities will incur significant expense. However, new methods that have the potential to cut the cost of the main task significantly are currently under development and evaluation.

Items that are likely to require financing will include:

- a) Rhododendron surveys, which will need to be comprehensive or eradication will be part completed and new invasions guaranteed.
- b) Awareness raising and publicity.
- c) A project co-ordination centre and staff.
- d) Contractors to carry out the eradication work.
- e) Tools and equipment.
- f) Mitigation schemes for protected animals, in particular otters and badgers which frequently inhabit rhododendron infested sites.
- g) Follow-up surveys to find and eliminate plants missed by main effort, which will save time and effort in the future.
- h) Follow-up work to ensure that residual seedlings and buds are eliminated.
- i) Compensation for gardeners and landowners reluctant to be parted from their *R. ponticum* specimens, even when the service is offered free.

j) Replacement plants – rhododendron or other – for rhododendrons removed will require mass production in nurseries.

- **Manpower.** A very creative suggestion has been proposed. In this time of recession and mass unemployment, this could be an opportunity to train and occupy many young and vigorous unemployed people, providing them with manual, social and conservation skills plus environmental understanding that, as long as biodiversity continues to be of socio-political importance, may be transferable at the end of the project. Enquiries are being made at Scottish Parliament level to see if this idea is feasible.
- **Methodology.** Rhododendron control methods have been developed which all have disadvantages of cost, safety and, effectiveness. The Lever & Mulch method devised in Morvern has much to recommend it for it is easier to carry out, requires minimal equipment and no heavy machinery, does not employ chemicals, costs significantly less per unit area than its rivals and is probably the best at actually killing rhododendrons, certainly equal to winching them out of the ground with heavy machinery and hazardous herbicide treatments which both increase the burden on finance and ecological integrity.

The minimum work force of a single fit operative (two for safety), suitably provided with safety clothing and armed with a saw and a hammer, can dismantle a rhododendron bush by hand, leaving little or no potential for regrowth and preventing all but minimal regeneration from seed. An army of the same can have a profound effect on infested land reasonably quickly. Any regrowth can be easily dealt with the following year with a little light labour. Regeneration of the local ecosystem would be more effectively promoted under a regime of minimal harmful intervention.

Lever & Mulch has been extensively used in the Morvern region in Argyll, Scotland and demonstrated convincingly to a significant number of potential users.

- **Next steps**
 1. We need to know exactly where the rhododendrons are and the severity of land occupation by them, hence the need for extensive surveys before any eradication projects can be started.
 2. At the same time a Lever & Mulch training programme should be initiated so that, when a work force is needed, expert practitioners are available for the task.
 3. The method should be more widely used and demonstrated so that contractors and, importantly, their sponsors will become convinced of its effectiveness as an eradication tool that, also importantly, saves money and may create employment.
 4. A PowerPoint presentation has been prepared that demonstrates with palpable clarity the severity of the rhododendron problem and illustrates the Lever & Mulch method, with reference to alternatives already being used. It is intended that, after evaluation, this will be made universally available on the Internet so that anyone can have the opportunity to understand the current ecological situation and evaluate the new control method, Lever & Mulch.

5. A website, dedicated to the National Rhododendron Eradication Project, will be created and training guides, such as a video, will be produced for distribution.
 6. It is hoped that the Scottish Rural Development Plan (SRDP) will embrace this project so that land owners can be encouraged to apply for funding to facilitate eradication on their territory.
- **Public awareness and sentimentality.** Mostly, people are not aware of the present rhododendron problem and, therefore, cannot foresee future consequences. In fact they do not see it as a problem at all, erroneously considering *R. ponticum* to be a national natural treasure. Pre-eradication publicity would need to be carefully planned, dramatically presented and so imaginatively conceived as to be utterly convincing, capable of converting the most resistant rhododendron lover.

R. ponticum is an extremely beautiful plant when it flowers in May and June. This is precisely why it was originally introduced to Britain (late 18th century), for its decorative properties. Thereafter, it was realised that it acts well as shelter hedging for garden protection and ground cover for game, and planted extensively. It is the only *Rhododendron* species (other than occasionally(?) *R. luteum*) to have escaped beyond the garden boundary and it is so proficient at this that it has become a serious weed. People's memories of past British scenery and understanding of the countryside are very limited so that, in the same way as regimented plantations of conical conifers are often thought to be a natural landscape feature, so *R. ponticum* has become a favourite 'wild' plant which many consider characteristic of the British scene, so much so that coach tours are organised that coincide with flowering time!

If eradication is desirable – from the ecological point of view, it definitely and unequivocally is – then *R. ponticum* will have to be removed, not only from numerous, extensive tracts of countryside, but also from every garden. That will require the owners' understanding, consent and participation. Experience in Morvern has shown that this is unlikely to be 100% achievable and, as we know, any remaining seed source will be a potential hazard to the eradication programme. **Therefore, public understanding of the Rhododendron problem will probably be the most challenging part of the project**, requiring very careful consideration, planning and implementation before removal gets under way. The public will need to understand the situation and be willing to permit an eradication programme to take place, indeed encouraged to join in and promote the project among their neighbours.

It is likely that, although many, when fully informed, will sympathise and volunteer to assist, that carrot & stick compensation (e.g. replacement non-invasive rhododendron species) and legal measures will be required to ensure that bushes of *R. ponticum* can be removed. Alternatively, a strategy will be required for monitoring and dealing with *R. ponticum* for which removal consent is not obtained, so that spread beyond such sites prevented by routinely pulling seedlings beyond the perimeter and remaining populations can be cleared, in consultation with new owners, if and when land ownership changes.

En masse public perception of *R. ponticum* must be changed. People will have to be persuaded that they can get their satisfaction from the 600 or so rhododendrons that don't invade the British countryside and that the absence of *R. ponticum* will enhance their enjoyment of the landscape as more like it used to be, not so long ago but beyond the memories of most people today. The public will have to be

assisted in seeing with the eyes of the ecologists who are already sensitised to the wolf-in-sheep's-clothing nature of *R. ponticum*.

Maybe we can capitalise on people's only partially rational hatred of rats. People were effectively convinced that cuddly coypu had to go: they permitted its total extermination and it is now once again absent from Britain. Important as it was where coypu gave cause for concern, that is not a particularly widely-known example. There have been similar, more significant shifts in public attitude to other creatures previously not perceived as pests, sometimes misguided but available to be benignly exploited for the general good. Not long ago the mink was valued for its superior pelt and probably seen by the general public as a beautiful creature (if they considered it as an animal at all, rather than a commodity). Indeed it is not difficult for us to become very fond of the otter or ferret, its close relatives. However, people panic and scream at the mere mention of the word rat, and the imagined image of a whole plague of rats has them in paroxysms of revulsion. Now that the message is being absorbed that mink is an invasive foreigner and many people recognise that it is not only the fox that massacres their hens (an animal behaviour phenomenon, exacerbated by human activity, the biology of which they entirely fail to understand), we could paint a picture of mink that resembles rat so that they come round to seeing it more like a revolting beast than cuddly toy or gorgeous precursor of the luxury fur coat.

We must identify and counter the Tiggywinkle attitude, turning people against mink. Instead of the sleek private creature usually depicted, a snarling mink with a mouth full of bloody chicken feathers would help replace sentiment with anger and disgust, which if managed carefully, might be transferable to an invasive alien plant.

Perhaps anti-mink and anti-rhododendron campaigns could work in tandem. If a zeitgeist of mink hatred can be established, I suggest following that with a campaign using slogans such as *RHODODENDRON: The Pink Mink* or THINK PINK MINK! Could TPM turn out to be a handy acronym? Are there other appropriate phrases that fit TPM?

We need to persuade the population to see beyond its deceptive beauty and learn to disdain what *R. ponticum* can do to the british countryside.

Bees love of *R. ponticum* and people love bees. Today, fortunately, they have more than a simplistic sentimentality for bees and are beginning to understand the ecological-economical consequences of bee extinctions, even if they tend to think of them just as honey or bumble. Again fortunately – for bee and ecosystem conservation – they tend to assume that all crops ('people food') are bee pollinated, but there's not too much harm in that if it enhances their caring about bees. People will soon notice the implications for bees if *R. ponticum* is removed, so alternatives should be publicised *a priori* (wild/ecological/conservation alternatives for the countryside and compensatory plants given freely to replace garden rhododendrons) and implemented before such objections arise, as they surely will.

SUMMARY

- **DISCUSS** what it is we want to do about *R. ponticum* at the local, Highland, Scottish and British scales. Assuming it is agreed that we wish to proceed with eradication at whatever level:

- **ENLIST** the participation of all organisations likely to have a role in a rhododendron project.
- **RESOLVE**, corporately, to create a rhododendron eradication project and devise it.
- **OBTAIN FUNDING**
- **ASSIGN** portions of the project to regional task groups.
- **SURVEY** all relevant tracts of land to discover the geography and severity of the problem, and identify all sites that require attention.
- **TRAIN** a workforce to carry out the practical aspects of the project using the Lever & Mulch method.
- **INFORM** the public about all aspects of the rhododendron invasion and the remedy, convincing them that there is a problem to be confronted and of the need for them to play a role in the project.
- **MAINTAIN**, once it's established and particularly after eradication has been completed, public awareness of the rhododendron threat so that re-introduction will not recur in the future.
- **CONCURRENTLY** or **SUBSEQUENTLY** contend with the many other invasive species that threaten our countryside.

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