



ROYAL FORESTRY SOCIETY

SURVEY OF RFS MEMBERS' VIEWS AND EXPERIENCES OF GREY SQUIRREL CONTROL

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January 2014

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SURVEY OF RFS MEMBERS' VIEWS AND EXPERIENCES OF GREY SQUIRREL CONTROL

1. Summary

The Royal Forestry Society (RFS) has conducted a survey of its members and other woodland owners and managers of the impact of grey squirrels on the health of the trees and woodlands they manage, their experience of grey squirrel control and the support that they would value to help with this task. Survey highlights are:

- Grey squirrels are considered to represent the greatest threat to England's broadleaved woodlands, marginally ahead of tree diseases and well ahead of deer. This is not consistent with the government policy to put protection of the health of trees and woods at the top of its priorities. Compared with tree diseases and deer management, there is very little research, grant aid or support of any practical kind for landowners to control grey squirrels unless in service of protecting red squirrel habitats.
- Grey squirrels are doing significant and widespread economic and environmental damage to woodlands with serious long term consequences to for their financial viability, landscape, and ecological value. Grant funding planting of broadleaves without committing to a robust long term grey squirrel control regime is not a good use of taxpayers' money and is not in the public benefit.
- Chalara changes the debate on grey squirrel control. Without Ash as a mitigation against grey squirrel damage, woodland owners are turning away from vulnerable broadleaved species such as Oak, Beech and Sweet Chestnut, which are increasingly difficult and expensive to grow, and planting more conifers. Without a more supportive regime for grey squirrel control, there is a risk of a long term decline in production of hardwood timber in the UK.
- No single or combination of methods of grey squirrel control is considered very effective. Woodland owners and managers who invest in a rigorous and intensive regime of shooting, trapping and poisoning are often able to keep squirrel populations under control and minimise damage to trees. Even this does not guarantee success and is too time consuming and expensive for many woodland owners. The prospect that the EU will no longer permit use of Warfarin as bait simply makes an unsatisfactory situation worse.
- Woodland owners and managers do not feel adequately supported in their efforts to control grey squirrels. A number of suggestions are put forward that it is felt would make a difference:
 - Increase public awareness and understanding of the threat to trees and woods from grey squirrel damage and the need for controls.

- Establish a research programme into more effective methods of grey squirrel control and increased understanding of the causes of grey squirrel bark stripping behaviour.
- Provide specific financial support to woodland owners for grey squirrel control particularly in high risk stands.
- Support the establishment of grey squirrel control groups which coordinate action across woodland owners at a landscape scale

There is some support for the introduction of mandatory controls for all land owners but equal numbers of members have strong reservations about a regulatory solution.

The RFS calls on FC England to listen to the voice of woodland owners and managers and adopt a more supportive stand on grey squirrel research and control.

2. Context

The grey squirrel is an invasive non-native mammal first introduced to the UK from North America in the 1876. It has spread to almost all parts of England and Wales and it is widely accepted that it is doing considerable damage to broadleaf woods by stripping bark which kills or deforms trees leading to loss of timber and environmental value, and woodland viability. Grey squirrels compete with the native red squirrel and carry a virus which kills red squirrel populations. As a result the red squirrel is an endangered species whose habitat is now confined to small pockets in the Isle of Wight, South West and North England.

This is largely a problem unique to the UK and Ireland, as grey squirrels are absent from continental Europe except in northern Italy, where they are reported to be spreading rapidly. The UK experience and approach to grey squirrel control has many lessons for other European countries.

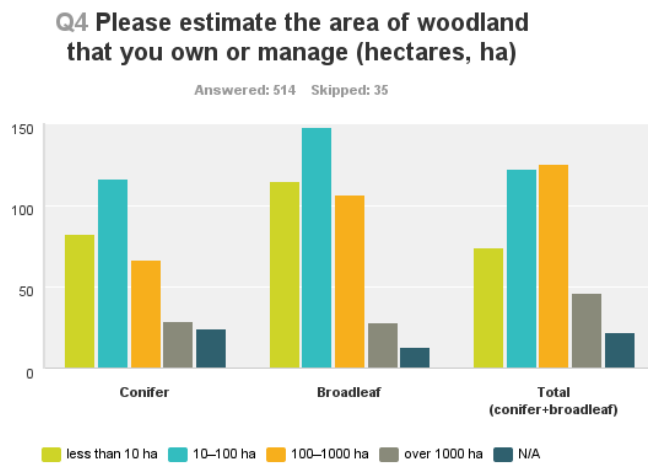
FC England is reviewing the policy on grey squirrel control published in 2006 (*Grey Squirrels and England's Woodlands: Policy and Action*). This policy recognised that grey squirrels represent a serious economic and environmental threat to sustainable woodland management in England. The policy identifies a number of areas for action including research on methods of control, advice on best practice, grants for woodland owners and encouraging co-operation and co-ordination across woodland owners. The policy defined areas that represent a critical threat. In effect this has meant prioritising resources to protect red squirrel habitats from grey squirrel invasion. Progress in many other areas has been limited due to lack of funding and it not making any discernable difference to the extent and severity of the problem.

In support of the FC England policy review, the RFS commissioned an online survey of members and non-members in December 2013 to consult the views and experiences of woodland owners and managers on the impact of grey squirrels on their broadleaved woods, the effectiveness of control methods and the support if any that would be required for more effective control. The survey is a combination of tick box questions and freeform comments. The latter provide much of the value of the survey and selected comments are reproduced in the report to illustrate the range of views expressed.

3. Survey participation

755 individuals and organisations participated in the survey of which 545 or 73% were RFS members. This represents more than 25% of the RFS online membership, a very high response rate by the standards of any benchmark for similar member surveys. The underlying participation rate was higher when taking into account the fact that the survey was targeted at woodland owners and managers, consultants and agents who represent a large group within a very diverse membership. 60% of survey participants were woodland owners and 40% managers/consultants/agents. All regions of England were represented with 13% of responses from members in Wales and Northern Ireland.

There is no significant statistical difference in the results of the survey between RFS and non-RFS members and the views expressed are totally consistent. Charts presented in this report are for RFS members only.

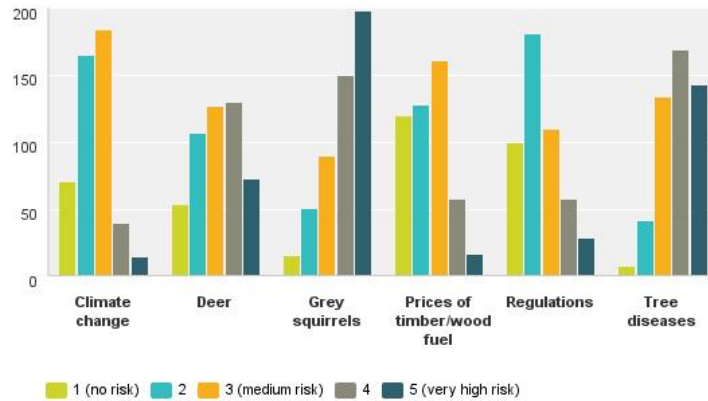


Participants were asked to categorise their woods by conifer/broadleaf mix and size bands. There is an even spread of conifer and broadleaf woodlands under management, with 56% broadleaf and 44% conifer. 19% of participants own or manage woods below 10 ha, 31% 10-100 ha and 32% 100-1000 ha. 12% own or manage woods in excess of 1000 ha. This confirms that a substantial area of privately owned, mainly mixed conifer/broadleaf woodland is represented in this survey.

4. The impact of grey squirrels on broadleaved woods

Q5 On a scale of 1 (no risk) to 5 (very high risk), please rate the following threats to your broadleaf woods.

Answered: 506 Skipped: 43



Grey squirrels represent the greatest threat to RFS members' broadleaf woodlands, marginally ahead of tree diseases and well ahead of deer.

How the threat is assessed depends on the owner's objectives and the possibility of effective mitigation management. Deer are a high risk without intervention, but intervention is possible. Squirrels are a high risk to timber production, but may be a lower risk to other objectives.

Selected members' comments:

- *I replanted the major part of my woodlands in 1987 with 80% English oak. The bark stripping by grey squirrels over those 26 years has seriously damaged an estimated 40% to 50% of the crop, in many cases fatally.*
- *Deer are only a fairly low risk because they are capable of being managed effectively unlike squirrels!*
- *Most of my young oaks were devastated by grey squirrels at about 14 years age - debarked and killed.*
- *Extensive grey squirrel damage on mature 20m tall beech adjacent to a car park has meant that they have had to be felled for safety reasons at a cost > £5k.*
- *...squirrels are at risk of undoing all of the good done by additional management over the years. Grant aided broadleaf planting will turn to scrub. This is not a public benefit. Squirrel control would be as woods would flourish rather than sit there with tops breaking out at 15 feet high.*
- *Without grey squirrel control there will be no broadleaved woodland merely scrub without viable trees.*

- *Grey squirrels are the single biggest threat to growing hardwoods in the UK (especially Oak) and must be controlled, especially in the light of diseases in other hardwoods.*

Some members also highlighted their experience of extensive damage to conifers by grey squirrels.

The risks of tree diseases and grey squirrels are linked. Ash is relatively resistant to grey squirrel damage and partly as a result of this has been extensively planted in recent years. Chalara means planting alternative broadleaved species with very few, especially native broadleaves, having the same attractive combination of characteristics as ash.

53% of participants reported significant or extensive damage to their woods by grey squirrels. 39% reported little or limited damage. The extent of damage is a function of the age of stands, species mix and the controls in place from one site to another and within the same wood.

Selected members' comments:

- *Extensive damage was done in 2001 [foot & mouth year] but the damage was not noticed until the autumn. Too late then but grey control is now a priority.*
- *Extensive damage before introduction of the Kania trap. Following careful siting of Kania traps I completely eliminated grey squirrel attacks. [See forthcoming issue of the RFS Quarterly Journal of Forestry]*
- *We are assiduous in attacking grey squirrels by the use of Warfarin, by shooting and trapping, with the help of neighbouring farmers and the shooting syndicate.*
- *Despite serious efforts to control grey squirrels, there is still moderate damage in places, even when squirrel numbers are very low.*
- *[Extent of damage] does not reflect the lack of management by agents or effort by owners, but is due to the costs and difficulties with logistics of controlling grey squirrels, especially in isolated woodlands or those adjacent to neighbouring woodlands with no grey squirrel control.*

50% of survey participants report that adaptation to grey squirrels is either a significant or integral part of their woodland management plan. Management measures include adaptation of species choice at planting/restocking stage, identifying high risk species and age, planting sacrificial species, initiating tough control measures at the time of first thinning when trees, especially oak are particularly vulnerable. Some prefer to implement rigorous and intensive grey squirrel control measures rather than adapt their management objectives. Some do both and there is evidence that control measures are introduced or intensified after the first experience of squirrel damage.

Selected members' comments:

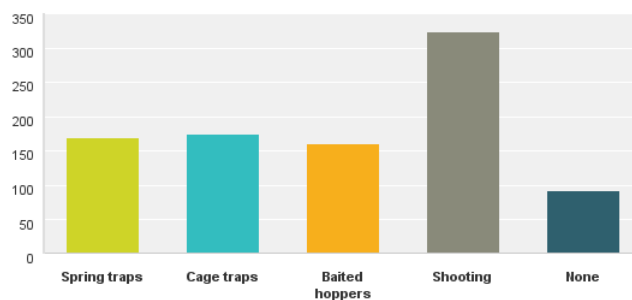
- *To date, Ash has been welcomed as an insurance against squirrel damage in broadleaved stands. The prospect of chalara leaves little alternative to planning to control grey squirrel, unless an owner is willing to abandon timber as a management objective.*
- *We don't plant Oak, Beech, Sweet Chestnut or Sycamore, relying on Ash in our conifer matrix. Due to chalara this is no longer a viable option. We are not planting broadleaves and manage mixed regeneration for resilience .*
- *I am not inclined to fill gaps with Oak stems.*
- *Local populations [of grey squirrels] are now dissuading me from planting broadleaved trees. I now favour the planting of conifers.*
- *I plant sacrificial trees, hoping to keep the squirrels off other species.*
- *No species is squirrel proof - and the site needs further diversification of species to limit potential damage of chalara and climate - I am not changing species choice to lower squirrel risk – instead upping squirrel control when and where needed.*
- *We prefer squirrel control to adapting management, but this is not 100% successful.*

78% of respondents report that their primary motive for controlling grey squirrels is to protect their trees and 16% that this is combined equally with the objective of protecting red squirrel habitats.

5. Methods of grey squirrel control and their effectiveness

Q9 What methods of grey squirrel control do you use in your woods (tick any that apply)

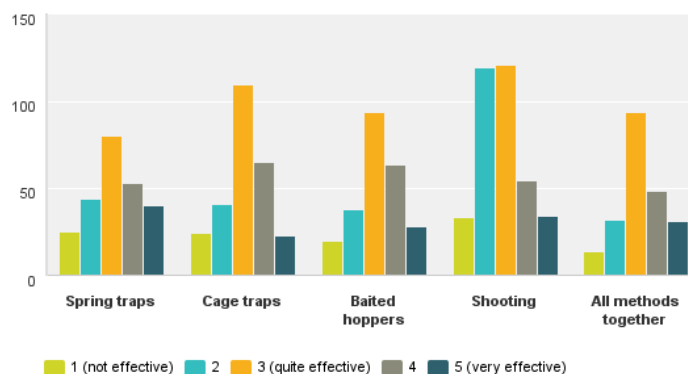
Answered: 486 Skipped: 63



Grey squirrels are controlled by a combination of methods. Spring traps, cage traps and baited hoppers are used in equal numbers often in combination with shooting which is reported as the most frequently used control method. Other methods of control include drey poking and adapting silvicultural regimes to introduce for example hard thinning (making distance between trees more difficult to leap across), mixed species and uneven age stands. Some RFS members do not control squirrels due to conflicts with public access and concerns about public reaction to killing squirrels.

Q10 In terms of costs and benefits, please rate the effectiveness, in your experience, of each of these control methods.

Answered: 422 Skipped: 127



Only 14% of respondents consider any, or even a combination of control methods, to be very effective. Each method has its adherents, with some members reporting very effective results with Kania traps, baited hoppers or shooting, but these are in a minority. The most frequently held view is that normal **control methods both individually and in combination are at best quite effective**. There is widespread agreement that to be most effective, control methods must be applied consistently and rigorously across a wide area. This means neighbours must participate on the same basis and that there can be no slackening of the regime over time, which, for uneven age woods, means permanently. This represents a considerable investment of time and money and very real practical and financial constraints for many woodland owners. The time and cost of purchasing and inspecting spring and cage traps is prohibitive for some and the cost of Warfarin bait is also a deterrent. As a result many woodland owners do not exercise any controls or only in selected high risk compartments, which is not considered very effective. However there is a long term payback in terms of the value of the timber.

Selected members' comments

- *The hard work that we put in on squirrel control is undermined by a lack of effort by our neighbours.*
- *[In] many local authority woodlands there is no appetite for grey squirrel control - there would probably be very large public concern and criticism of any officer who tried it. Severe council cuts to budgets and staff make any works such as these pretty much a non-starter anyway.*
- *We have virtually given up using Warfarin, largely because of the hassle – and considerable expense - of having to buy the ready-mixed bait.*

The prospect that the licence to supply Warfarin in the UK will not be renewed by the EU is a serious additional risk. The UK is the only EU member state where Warfarin is

extensively used for grey squirrel control and the damaging economic and environmental consequences of a ban on its use in UK woodlands not well understood. **32% of survey respondents say that a ban on the use of Warfarin would have serious consequences on their ability to control the pest.** 51% said that they do not use Warfarin and/or do not consider it an effective control method.

6. Support needed to control grey squirrels more effectively

49% of survey respondents do not feel that they are supported at all by FC England or other regulatory authorities in their efforts to control grey squirrels. A further 33% feel that they are inadequately supported. Asked what support would be most effective, a wide range of views were expressed and can be summarised under the following headings:

- a. **Public awareness:** While there has been much effort to raise public awareness and engagement in tree diseases, RFS members point out nothing has been done to raise public awareness and understanding of the threat posed by grey squirrels to the health of England's woods. This is not consistent with the government's policy to put protection of the health of woodlands at the top of its priority list. RFS members call for a concerted government-led public education programme to rebalance the arguments in favour of control, supported by landowning NGOs.
- b. **Leadership:** RFS members feel that FC England should take a lead on grey squirrel control rather than wholly relying on the voluntary efforts and resources of the private sector. Establishing control programmes in the Public Forest Estate would demonstrate that this is a priority. Management plans should include specific control measures owners commit to implement and Woodland Officers charged with encouraging woodland owners to control squirrels and make woodland owners aware of the costs and risks involved with effective establishment of the most vulnerable species. FC England should also take a lead to persuade the EU to continue to license Warfarin.
- c. **Facilitate landowner co-ordination:** Practical and financial support to encourage the creation of grey squirrel area management groups. As one member comments: *"Squirrel control only really works if it is co-ordinated across a large enough area and so can be done successfully on big estates or where there is genuine co-ordination across landowners as is often the case in Red Squirrel Control areas. The Grey Squirrel Control Groups within Red Squirrel areas and the work of the Deer Initiative to encourage control groups are examples of the types of projects that will be required right across England if grey squirrel control is to be cost effective and most importantly, successful. This will require support, mainly in terms of dedicated staff and some funding but should become self-sustaining once the groups are in place and operating"*.
- d. **Research:** Funds should be allocated for scientific research into more effective grey squirrel control methods, both biological (e.g. understanding drivers of bark stripping behaviour, breeding control, pine marten predation) and mechanical (e.g. more effective poisons). The link between pheasant breeding and squirrel populations also needs to be better understood. Unlike tree diseases, research in this area is negligible, and as the UK

is in the front line, other European countries rightly look to the UK to take a lead in this area.

- e. **Control methods.** Many RFS members call for a relaxation of the restrictions on use of baited hoppers and traps consistent with legally established humane standards. Suggestions include: extend the period of use for baited hoppers (currently March to August), permit reintroduction of Warfarin liquid concentrates, and permit the introduction of self-setting spring loaded traps (Goodnature A24). There is limited support for a nationwide cull.
- f. **Financial support:** The most frequent response from RFS members is to call for specific grant aid for grey squirrel control. Current EWGS support for woodland maintenance does not adequately contribute to the cost of buying grey squirrel traps, hoppers or bait or the time required to operate them effectively. NELMS should include a provision to grant aid the purchase of equipment at a similar level to the grant for deer high seats, and a specific element of the management grant should be ring fenced for squirrel control. Some members advocate the reintroduction of a bounty on squirrel tails tied to grant aid as a method of verification.
- g. **Regulation:** RFS members are divided on the need for and effectiveness of regulation. Some believe regulation would be unwelcome, is not required or would not have any impact due to the difficulty of verification. Some advocate mandatory control by all landowners, including local authorities. This could mirror the current noxious weed regulations where there is a regime of control orders and fines for non-compliance. It is suggested by some members that woodland management grants (including restocking) are contingent on implementing effective squirrel control, or tied into cross compliance measures under Single Farm Payment (or its future equivalent), with repayment of the grant required for non-compliance. Such measures would be very difficult to implement effectively.

The survey responses strongly support the view that maintaining the status quo to public policy on grey squirrel control would be a very disappointing outcome of the FC England review, and that there is now a window of opportunity to improve the long term health of England's woods by taking a more active stand and backing this up with specific support for woodland owners to take concerted action to implement effective control measures.

January 2014

Attachment: RFS squirrel survey questionnaire

RFS Squirrel Survey 2013

Introduction

Forestry Commission England is reviewing policy on squirrel control. Currently this is to protect red squirrels, not trees.

In support of this policy review, the RFS is calling for evidence from woodland owners and managers of their experience and views of the impact of grey squirrels on trees and woods.

Your views are crucially important to help influence policy development. Please take a few minutes to answer these 14 questions.

Section A: About you

*1. Are you a member of the RFS?

Yes

No

2. Please choose the phrase that describes you best

Woodland owner

Woodland manager/consultant

Arborist

Other (please specify)

3. Please indicate your approximate location

North West (Cumbria to Cheshire)

North East (Northumberland to S. Yorkshire)

Northern Ireland

Wales (North)

Wales (South)

Central and Midlands (Staffs/Derbys/Notts to Glos/Oxon/Bucks/Beds)

East (East Anglia, Cambs)

London and Home Counties

South and West

Devon/Cornwall

Other (please specify)

Section B: About your woodlands

RFS Squirrel Survey 2013

*4. Please estimate the area of woodland that you own or manage (hectares, ha)

	less than 10 ha	10–100 ha	100–1000 ha	over 1000 ha	N/A
Conifer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Broadleaf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Total (conifer+broadleaf)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. On a scale of 1 (no risk) to 5 (very high risk), please rate the following threats to your broadleaf woods.

	1 (no risk)	2	3 (medium risk)	4	5 (very high risk)
Climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grey squirrels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prices of timber/wood fuel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tree diseases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If appropriate, please provide additional comments here:

6. On a scale of 1 (no damage) to 5 (extensive damage), please rate the extent of damage to your broadleaf woods by grey squirrels

	1 (no damage)	2	3 (limited damage)	4	5 (extensive damage)
Extent of damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If appropriate, please provide additional comments here:

7. What influence, if any, do grey squirrels have on your woodland management decisions?

	1 No influence at all	2	3 Limited influence	4	5 Adaptation to grey squirrels is integral to woodland management plans
Level of influence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If appropriate, please provide additional comments here:

Section C: About control of squirrels

8. What is your primary motive for controlling grey squirrels? (Please choose only one.)

- To protect red squirrel habitats
- To protect broadleaf trees from damage
- To protect both red squirrels and broadleaf trees

Other (please specify)

9. What methods of grey squirrel control do you use in your woods (tick any that apply)

- Spring traps
- Cage traps
- Baited hoppers
- Shooting
- None

Other (please specify)

10. In terms of costs and benefits, please rate the effectiveness, in your experience, of each of these control methods.

	1 (not effective)	2	3 (quite effective)	4	5 (very effective)
Spring traps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cage traps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Baited hoppers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shooting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All methods together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If appropriate, please provide additional comments here:

11. If use of Warfarin bait were to be banned, what impact would this have on your ability to control grey squirrels? (Please rate: 1 no impact, to 5 great impact)

	1 None. Warfarin is not used and/or not considered to be effective	2	3 Some. Alternative methods will substitute	4	5 Great. This would remove the most effective current deterrent
Impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. In your efforts to control grey squirrels, how do you feel about the current support provided by the regulatory authorities (Forestry Commission, NRW, NE etc)? (Please rate: 1 not supported to 5 very well supported)

1 Not at all supported

2

3 Adequately supported

4

5 Very well supported

Support provided by regulatory authorities

13. What changes, if any, to regulations for grey squirrel control would make the most difference to the health of your woods?

14. What changes, if any, to support (from the regulatory authorities etc) for grey squirrel control would make the most difference to the health of your woods?

Thank you

Thank you for taking the time to complete this survey. Your responses will be invaluable as we prepare evidence for the FC England review.

For more information about the Royal Forestry Society, please visit our website: www.rfs.org.uk