

EXPLANATORY MEMORANDUM TO
THE WILDLIFE AND COUNTRYSIDE ACT 1981 (VARIATION OF SCHEDULE 9)
(ENGLAND AND WALES) ORDER 2010

2010 No. 609

1. This explanatory memorandum has been prepared by Department for Environment, Food and Rural Affairs and is laid before Parliament by Command of Her Majesty.

2. Purpose of the instrument

2.1 The Wildlife and Countryside Act 1981 (Variation of Schedule 9) (England and Wales) Order 2010 adds 61 new entries to Schedule 9 to the Wildlife and Countryside Act, 1981 (WCA) and removes 8 entries. The Order also amends a further 2 plant entries with the substitution of a more appropriate entry.

2.2 Species listed on Schedule 9 are prohibited from release into the wild.

2.3 Schedule 9 to the WCA is to be amended using powers under section 22(1) .

3. Matters of special interest to the [Joint Committee on Statutory Instruments or the Select Committee on Statutory Instruments]

3.1 None

4. Legislative Context

4.1 Sections 14 – 14ZB of the Wildlife and Countryside Act, 1981 (“WCA”) are the principal provisions that deal with non-native species.

4.2 Section 14(1) of the WCA prohibits the ‘release’ or ‘allowing to escape’ into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, GB in a wild state, or any species of animal listed in Part 1 of Schedule 9. Section 14(2) prohibits ‘planting’ or ‘causing to grow’ in the wild of any plant listed in Part 2 of Schedule 9

4.3 Exceptions to these prohibitions may be authorised by licence issued under section 16 of the WCA by Natural England (England) or the Countryside Council for Wales (Wales).

4.4 The Secretary of State’s powers to vary the schedules are set out in section 22(1) of the Act.

4.5 Part I of the WCA extends to the territorial waters adjacent to Great Britain: 12 nautical miles from the coastal baseline (usually the low water mark around the coast)¹. The WCA does not extend to the offshore marine area or international waters.

5. Territorial Extent and Application

5.1 This instrument applies to England and Wales.

¹ The UK baseline is delineated in the Territorial Waters Order in Council 1964 (as amended by the Territorial Sea (Amendment) Order 1998, [SI 1998/2564](#)).

6. European Convention on Human Rights

As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

- *What is being done and why*

7.1 Defra's Departmental Strategic Objective (DSO) for the natural environment is to achieve "a healthy, resilient, productive and diverse natural environment". Within that our Intermediate Outcome (IO) is for "biodiversity which is valued, safeguarded and enhanced".

7.2 A wide range of non-native species have been introduced to Great Britain (GB) making a positive contribution to economic and social well-being through, for example, forestry, horticulture, fisheries and the pet sector. Many other species have been introduced accidentally, most of which have had a benign or positive impact on the natural history of Britain. However, a minority of non-native species exhibit invasive qualities and have had a negative impact on our native biodiversity and society. We consider these invasive non-native species to be: 'Any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, our health or the way we live'.

7.3 Worldwide, the introduction of invasive non-native species poses a significant threat to native biodiversity, particularly fragile ecosystems such as on islands. In response to the threat that invasive non-native species pose, Defra and the Welsh and Scottish Governments published *The Invasive Non-native Species Framework Strategy for Great Britain* ("the Strategy"). This is intended to provide a strategic framework within which the actions of government departments, their related bodies and key stakeholders can be better co-ordinated. Its overall aim is to minimise the risks posed, and reduce the negative impacts caused, by invasive non-native species in GB.

7.4 One of the objectives stated in the Strategy is to:

Ensure that the legislative framework in GB for addressing invasive non-native species is coherent, comprehensive, fit-for-purpose and proportionate.

7.5 Making the most effective use of existing legislative powers is one of the ways in which the above objective will be achieved. It is widely recognised that Schedule 9 is out-of-date. In light of this, the Joint Nature Conservation Committee (JNCC) provided advice on amendments which it felt should be made to Schedule 9 to the WCA. This evidence is the basis of the Order in England and Wales.

8. Consultation outcome

8.1 Responses to the public consultation indicated strong support for the amendments to Schedule 9.

9. Guidance

9.1 N/A

10. Impact

10.1 The impact on business, charities or voluntary bodies is considered negligible. However, it is apparent that the costs of dealing with invasive non-native species are already great. Whilst these costs are ongoing and will continue through natural spread of these species, the costs will

increase yet further if invasive non-native species are spread further through careless or deliberate human actions.

10.2 The impact on the public sector is considered negligible.

10.3 An Impact Assessment is attached to this memorandum.

11. Regulating small business

11.1 The legislation does not apply to small business.

12. Monitoring & review

12.1 Schedule 9 will be review in 3 -5 years, although this is flexible, dependent on emergent issues.

13. Contact

Simon Mackown at the Department for Environment, Food and Rural Affairs Tel: 0117 3728830 or email: simon.mackown@defra.gsi.gov.uk can answer any queries regarding the instrument.

Summary: Intervention & Options

Department /Agency: Defra	Title: Impact Assessment of Listing Proposed New Species on Schedule 9 to the Wildlife & Countryside Act 1981 in England & Wales	
Stage: Implementation	Version: 3.0	Date: 2 October 2009
Related Publications: Impact Assessment of the Order to ban the sale of certain non-native species in England and Wales under section 14ZA of the Wildlife and Countryside Act 1981		

Available to view or download at:

<http://www.defra.gov.uk/wildlife-pets/wildlife/management/non-native/s9-bansale.htm>

Contact for enquiries: Simon Mackown

Telephone: 1371 8830

What is the problem under consideration? Why is government intervention necessary?

Globally, invasive non-native species are considered one of the most significant threats to biodiversity. Their impacts can be far reaching and costly - disrupting ecosystems, threatening economic interests such as agriculture, forestry, fisheries and land use development, as well as impacting on our general quality of life. Thus there is a need for a range of timely intervention measures, including regulation where appropriate, to address the risks and consequences of their introduction (whether accidental or deliberate).

What are the policy objectives and the intended effects?

Given the negative impacts of invasive non-native species it is appropriate to take measures to prevent their spread or introduction and subsequent establishment in the wild. Listing a species on Schedule 9 to the Wildlife and Countryside Act, 1981, makes it an offence to release, allow to escape, plant or cause it to grow in the wild. The Schedule may also include native species to ensure re-introduction programmes are carried out in an appropriate manner and biodiversity is properly safeguarded.

What policy options have been considered? Please justify any preferred option.

The overall policy option is whether or not to update schedule 9. The assessment was made on a case by case basis, for species on the list the decision was whether or not to retain them on the list. For species not on the list, the decision was whether or not they should be added. Regardless of the approach, non-legislative measures are an essential component of tackling the impacts of invasive non-native species. Where species have an impact on native biodiversity, legislative measures can play an important role in mitigating the impacts by stopping or slowing the spread of the species in question.

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

In 3 to 5 years, although this is flexible, depending on emergent issues. We will continue to monitor the impact of non-natives, utilising measures such as the non-natives risk assessment mechanism.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:



.....17/12/09 Date:

Summary: Analysis & Evidence

Policy Option: Updating schedule 9	Description:
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COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups' No monetised costs of listing species on schedule 9 have been identified. However, there may be a negligible admin cost associated with licence applications to permit derogation from the legislation.				
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Average Annual Cost (excluding one-off)						
£						
Total Cost (PV)		£ Negligible				
Other key non-monetised costs by 'main affected groups' No significant non-monetised costs identified.						

BENEFITS	ANNUAL BENEFITS	Description and scale of key monetised benefits by 'main affected groups' While it is difficult to obtain precise figures, benefits are accrued through reducing the likelihood that listed species spread within the country and therefore the expected costs associated with managing and controlling invasive non-natives is reduced. As an example of quantified costs the Environment Agency spends a minimum of £225,000 a year on the removal of invasive aquatic plants.				
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Average Annual Benefit (excluding one-off)						
£						
Total Benefit (PV)		£ Uncertain				
Other key non-monetised benefits by 'main affected groups' Reduced threat from competition and disease to native biodiversity and habitats as well as reduced health and safety risks to humans.						

Key Assumptions/Sensitivities/Risks The Small Firms Impact Test showed that adding the proposed species to schedule 9 will have an insignificant impact on small businesses as there is no known sector involved in their release into the wild or the supply to others for that purpose as a core business activity.

Price Base Year	Time Period Years	Net Benefit Range (NPV) £	NET BENEFIT (NPV Best estimate) £
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What is the geographic coverage of the policy/option?	England and Wales								
On what date will the policy be implemented?	06 April 2010								
Which organisation(s) will enforce the policy?	Police/NE/CCW								
What is the total annual cost of enforcement for these organisations?	£ Negligible								
Does enforcement comply with Hampton principles?	Yes								
Will implementation go beyond minimum EU requirements?	No								
What is the value of the proposed offsetting measure per year?	£								
What is the value of changes in greenhouse gas emissions?	£								
Will the proposal have a significant impact on competition?	No								
Annual cost (£-£) per organisation (excluding one-off)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro</td> <td style="width: 25%; text-align: center;">Small</td> <td style="width: 25%; text-align: center;">Medium</td> <td style="width: 25%; text-align: center;">Large</td> </tr> <tr> <td style="text-align: center;">No</td> <td style="text-align: center;">No</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">N/A</td> </tr> </table>	Micro	Small	Medium	Large	No	No	N/A	N/A
Micro	Small	Medium	Large						
No	No	N/A	N/A						
Are any of these organisations exempt?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	No	No	N/A	N/A				
No	No	N/A	N/A						

Impact on Admin Burdens Baseline (2005 Prices)		(Increase - Decrease)
Increase of £	Decrease of £	Net Impact £

Key:

Annual costs and (Net)

Evidence Base (for summary sheets)

1. Title

1.1 Review of Schedule 9 to the Wildlife and Countryside Act 1981 in England and Wales.

2. Purpose and intended effect of measure

(i) The objective

2.1 Controlling the release of invasive non-native species into the wild is a key element of conserving our native flora and fauna and contributes towards achieving the aim of halting the loss of biodiversity in the EU by 2010. It also serves two other obligations:

1) The Convention on the Conservation of European Wildlife and Natural Habitats, which states under Article 11(2)(b) that each Contracting Party undertakes to 'strictly control the introduction of non-native species'; and

2) The Convention on Biological Diversity, which has a wider obligation, and states under Article 8(h) that each Contracting Party 'shall as far as possible and as appropriate prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species'.

2.2 The measure is also designed to help reduce the costs of the presence of invasive non-native species in the wild. In 2007 Defra estimated that invasive non-native species cost the British economy in excess of £2 billion per year.

2.3 The purpose of this review is to revisit and amend, as appropriate, Schedule 9 to the Wildlife and Countryside Act 1981 ("the Act") to reduce the threat of certain invasive non-native species. The Government Response and this Impact Assessment set out the amendments to Schedule 9, their costs and benefits.

(ii) The background

2.4 Section 14 of the 1981 Act is the principal provision that deals with non-native species. It prohibits the introduction into the wild of any animal (including birds, reptiles, fish, invertebrates etc.) of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state, or any species of animal or plant listed on Schedule 9. In the main, the Schedule lists invasive non-native animal species, that are already established in the wild and invasive non-native plant species, which pose a conservation threat to native biodiversity and habitats such that releases should be regulated. The Schedule may also list native species so as to provide a level of control so that re-introduction programmes are carried out in an appropriate manner and biodiversity is properly safeguarded in that process.

2.5 Between 8 November 2007 and 31 January 2008 Defra and the Welsh Assembly Government held a public consultation on proposed amendments to Schedule 9. The summary of responses to this consultation was published on 13 May 2009 and largely supported the proposed amendments. The consultation documents can be found here: [http:// defra.gov.uk/wildlife-pets/wildlife/management/non-native/s9-bansale.htm](http://defra.gov.uk/wildlife-pets/wildlife/management/non-native/s9-bansale.htm)

(iii) The rationale for government intervention

2.6 The species identified for addition to Schedule 9 have the potential to harm biodiversity, economic or social interests if released or allowed to grow in the wild. The scale of the potential threat justifies the use of regulatory measures to help prevent this from occurring. The principal benefit of the addition of species to Schedule 9 is to bring about behaviour change resulting in a reduction in the release of invasive non-native species into the wild and the subsequent associated negative impacts.

3. Options

All species on the schedule or proposed to be included in the schedule were appraised on a case by case basis as follows:

- for species currently on the schedule the option considered was to retain them or not (retaining them was the baseline to which costs and benefits of removal were considered)
- for new potential species the option considered was to add them or not (not adding them was the baseline to which costs and benefits addition were considered)

The culmination of these case by case assessments is an updated schedule 9, which is our preferred option.

The individual species decisions are explained in the annex to this evidence base, the analysis supported the addition of a number of species of plants and animal, and the removal of some species of animal. Some species of both plants and animals were considered but not added.

The rationale for including or excluding species from the list are presented below along with the types of costs and benefits assessed in deciding whether to update or not the list of species on schedule 9.

Adding/retaining species listed on Schedule 9

3.1 The Convention on Biological Diversity guiding principles place an emphasis on preventative measures, as such it is prudent to take a precautionary approach to the addition of species to the Schedule. Given the 'precautionary principle', species which JNCC have advised are potentially invasive have been added to Schedule 9 unless one of the conditions in highlighted below..

3.2 We recognise that legislation is not the only mechanism available to government. As such the GB administrations have developed, with key stakeholders, an *Invasive Non-native Species Strategic Communications Plan* to provide a framework for future publicity campaigns. The aim of this publicity is to elicit behaviour change by raising public or commercial awareness of the potential consequences of releasing or planting species in the wild. Such action will augment any amendments to Schedule 9 and will provide an alternative approach to preventing negative impacts of those species which are inappropriate for addition to Schedule 9.

Not adding to/removing species from Schedule 9

3.3 Where the addition of a species may have an impact on a business or other activity we believe it is appropriate to have more robust evidence to demonstrate the invasiveness of those species in GB. This is to ensure that the wider impacts of adding them to Schedule 9 are taken into account. As a result, for some species, decisions have been deferred while further evidence is gathered.

3.4 The decision not to add certain species to Schedule 9 was taken for one of the following reasons:

- a) the species (animals only) is not considered ordinarily resident in GB and therefore release is already prohibited under section 14 (1);
- b) release of the species is already prohibited by other legislation, for example the Import of Live Fish Act 1980; or
- c) the species is not considered invasive.

3.5 Annex A outlines the approach and rationale for each of the amendments proposed in the consultation.

4. Costs and Benefits

i) Sectors and groups affected

4.1 Addition to Schedule 9 will not restrict the secure keeping or the trade in a species by any sector or group. While listing a species on Schedule 9 will prohibit its release into the wild, its release may be authorised under a licence. It is therefore expected that scheduling the proposed species should impact equally across everyone within England and Wales: no one interest is singled out for disproportionate regulation.

ii) Updating Schedule 9 as directed above.

Benefits:

4.2 This option allows the list of species to be brought up to date and targeted towards those invasive species which are known or likely to have an adverse impact on native biodiversity and economic interests. It is difficult to quantify the benefit of adding species to Schedule 9 as this is primarily a preventative measure, deterring deliberate or careless releases. Listing reduces the risk of human induced spread of the species concerned, however as there are no clear incentives to release species it is hard to estimate the extent of this reduced risk, especially that which solely results from listing. However, within a wider basket of policy measures, where risks are reduced it seems likely that addition of certain species to the Schedule could have a number of positive benefits. Future introductions of such species could result in damage to biodiversity and economic interests such as agriculture, forestry, fisheries, boating and development.

4.3 Ecological benefits will include prevention of negative impacts on biodiversity and native ecology which is known to be seriously compromised by some non-native species. Addition of species to the Schedule is in accordance with our obligations under The Convention on the Conservation of European Wildlife and Natural Habitats and under The Convention on Biological Diversity.

4.4 Some of the consultation responses indicated that these measures may result in many businesses and organisations needing to spend less on the prevention and management of the consequences of infestation of invasive non-native species. For example, The Royal Society of Wildlife Trusts said:

“It would save us money and staff time in dealing with these species. Often this is a long-term task which takes up too much of our time and resources.”

4.5 Controlling invasive non-native species can incur significant costs for some organisations. For example the Environment Agency spends a minimum of £225,000 a year on the removal of invasive aquatic plants. This illustrates the potential for future savings if invasive non-native species are prevented from establishing in the wild.

4.6 Wider benefits to society will include reduced damage to private property and easier and cheaper maintenance of amenity areas. For example, fishing and leisure boating on waterways that might otherwise have become unsuitable for that purpose due to the spread of invasive aquatic plants. Preventing the spread of invasive species will also reduce health and safety risks to humans, for example by minimising flood risks caused by invasive non-native aquatic and riparian plants.

Costs:

4.7 Economic and business costs: Release of Schedule 9 species into the wild would incur only the negligible administrative burden of having to apply for a licence to do so. In the main this is likely to only affect animal rescue centres who wish to release rehabilitated Schedule 9 animals to the wild. Where an application is not successful individuals would incur the cost of keeping, re-homing or euthanasia of the animal in question.

4.8 Natural England estimates it costs just over £400 to deal with section 14 licence applications. There is no charge to the applicant from Natural England. Where licences are issued to allow the release of native species (listed on Schedule 9) as part of a re-introduction programme it is likely that these costs will be higher. However, the total administrative cost related to licensing will be negligible compared to the benefits of preventing inappropriate release.

4.9 Compliance costs: Offences under the Act are normally enforced by the police. Local Authorities also exercise enforcement functions under section 25 of the Act. It is not envisaged that the proposed amendments will impose any significant additional burden upon the enforcement authorities. Though there will be a small one off cost associated with authorities needing to familiarise themselves with the new list of species covered.

ii) Retaining the current Schedule 9.

Benefits:

4.10 Generally, there are no benefits to pursuing this option. In the scenario where it is inappropriate for a species to be newly added to the Schedule this has the implicit benefit of avoiding the costs that might be incurred through the blanket listing of species on a precautionary basis. For example, by not listing the evergreen oak on the Schedule, the species will continue to be available (without the need for a licence) to the Forestry Commission for forestry planning in light of future climate change.

4.11 One of the justifications for not listing species on the Schedule, was that release is already prohibited elsewhere. Duplicating legislation could result in complication and misunderstanding for members of the public and licensing authorities. In particular if species are listed under more than one piece of legislation an applicant may have to make multiple licence applications if they wished to derogate from the legislation. This could introduce unnecessary bureaucracy. These benefits would only be derived by chance rather than design based on the current form of the list.

Costs:

4.12 This would impose no additional immediate financial costs, as it preserves the status quo there would be no compulsion for additional action to be taken. However, there would be no lessening of the risk of potential future costs from intentional or accidental introductions into the wild. Indeed, there would be a greater risk that these species could cause further environmental, ecological, social and economic harm. That is, the baseline of an unchanged schedule 9 could be expected to be associated with increasing, not constant costs of species invasion. Outside of very small areas the removal of detrimental species, once established, is usually impossible and the cost prohibitive so that damage is likely to be irreversible. In such instances it is likely that these species would incur ongoing management costs in order to limit the harm they may cause. For example, it is widely accepted that eradication of Japanese knotweed is neither practical nor affordable (In 2003 Defra conservatively estimated this to be £1.56 billion in GB), therefore management of the species is required to minimise its negative impacts on the natural and built environment. In the main these ongoing costs fall to landowners, local government and government agencies.

5. The Small Firms Impact Test

5.1 The Small Firms Impact Test showed that adding species to Schedule 9 will have a negligible impact on small businesses as there is no known sector specifically involved in or reliant on their release into the wild, or the supply to others for that purpose. Furthermore, many businesses are already encouraged by their trade associations to prevent the release to the wild of species listed on Schedule 9. For example, the Ornamental and Aquatic Trade Association and the Horticultural Trade Association recently issued a press release encouraging their members to cease the sale of *Ludwigia peploides* and *Ludwigia grandiflora* and to destroy any remaining stock they hold.

5.2 Additionally, Defra's Horticultural Code of Practice published in 2005 already strongly encourages those involved in the horticultural industry to refrain from using invasive non-native plants in such a way that could facilitate their spread into the wild. There has been increasing awareness of the issue in the horticultural sector and an indication from a number of organisations supporting codes of practice.

5.3 In the case of animals it is already an offence under section 14 of the Wildlife and Countryside Act 1981 to release or allow to escape into the wild any species of a kind which is not ordinarily resident in or a regular visitor to Great Britain in a wild state. Businesses both large and small should therefore already

be taking steps to ensure that non-native animal species are not released or allowed to escape from their possession into the wild.

6. Conclusion

6.1 In general, the economic and environmental damage caused by the establishment of invasive non-native species in the wild is well known. For example, of the Environment Agency's top 10 priority invasive non-native species needing action, 5 are species now being added to Schedule 9. Of the other 5 species, 4 are already listed on the Schedule, and the 10th, topmouth gudgeon, is already regulated by the Import of Live Fish Act 1980. In 2005/6 the Environment Agency spent £35,000 on projects relating specifically to floating pennywort. This does not include the wider general staff costs in dealing with this species, which as a percentage average would be about 260 staff days (about £65,000). This gives a total of about £100,000 in one year on floating pennywort alone. The cost would be more in 2009.

6.2 It is therefore apparent that the costs of dealing with invasive non-native species are already great. Whilst these costs are ongoing and will continue through natural spread of these species, the costs will increase yet further if invasive non-native species are spread further through careless or deliberate human actions. Within the wider perspective on policy on invasive non-native species adding species to Schedule 9 will provide an underpinning legal deterrent that could help to prevent such actions and therefore contribute to the benefits of reduced spread of such species. The costs of updating Schedule 9 are likely to be minimal and therefore the likelihood that the benefits will exceed this seems reasonable.

7. Post-implementation review

7.1 To be undertaken at the next review of Schedule 9, in 3 to 5 years, although this is flexible depending on emergent issues. We will continue to monitor the impact of non-natives, utilising measures such as the non-natives risk assessment mechanism.

Contact:

Protected Species and Non-Native Species Team,
Wildlife Species Conservation, Defra,
1/08 Temple Quay House, 2 The Square, Temple Quay,
Bristol, BS1 6EB

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	No	Yes
Small Firms Impact Test	Yes	No
Legal Aid	No	Yes
Sustainable Development	No	Yes
Carbon Assessment	No	Yes
Other Environment	No	Yes
Health Impact Assessment	No	Yes
Race Equality	No	Yes
Disability Equality	No	Yes
Gender Equality	No	Yes
Human Rights	No	Yes
Rural Proofing	No	Yes

Annexes

Rationale for decisions

Animals to be added to Schedule 9

Species	Rationale
Mammals	
Wild boar, <i>Sus scrofa</i>	<p>Once native to Britain, this species became extinct in the wild in the 17th Century, but has now become re-established in small feral populations in some areas. The countryside has altered significantly since wild boar were last present in Britain. As such there is some uncertainty of the impacts this species could have on native biodiversity.</p> <p>In 2008 Defra published <i>Feral wild boar in England: An action plan</i>, in which the Department undertook to consider the addition of wild boar to Schedule 9 to provide more effective controls on the release of this species into the wild.</p> <p>Some respondents to the consultation considered wild boar to be a former native species and, as such, they felt the species should not be added to the Schedule. However, because of the potential risk this species posed most respondents were of the view that release of this species should be restricted by its addition to Schedule 9.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: There will potentially be a reduction in the inappropriate release of wild boar and the prevention of associated negative impacts. A larger wild boar population will likely incur greater costs associated with the management of the species. For example the cost of providing effective fencing around agricultural crops to exclude wild boar has been estimated at more than £3 per metre, which alone is a considerable cost to farmers (Defra (2005), <i>Feral Wild Boar in England – Status Impact & Management</i>). The species has the potential to act as a vector of diseases which could have severe negative impacts on agriculture. However, a risk assessment of the impacts of wild boar indicate that the risk of a disease outbreak occurring is low (Defra (2008) <i>Feral Wild Boar in England: An action plan</i>. See: http://www.naturalengland.org.uk/Images/feralwildboar_tcm6-4508.pdf).</p>
Chinese water deer, <i>Hydropotes inermis</i>	<p>Chinese water deer are currently limited to small populations in Bedfordshire, Cambridgeshire and the Norfolk Broads. However, more generally deer populations in GB are increasing causing harm to biodiversity, forestry and human health and safety through risk of road traffic accidents.</p> <p>Although some respondents were of the opinion that this species was not currently invasive most respondents thought that this species should be added to Schedule 9. In their consultation response the Deer Initiative have advised that while there is uncertainty over the</p>

Species	Rationale
	<p>invasiveness of this species this may alter with climate change (high winter mortality is likely to be a factor in the current restriction in its range) or if the species were released elsewhere. Given these potential risks it is prudent to take measures to limit the spread of this species to prevent further population growth by adding the species to Schedule 9.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: In general deer populations in GB are on the increase which have the potential to impact negatively on biodiversity, agriculture, forestry and human health and safety. The impact assessment for the Regulatory Reform (Deer) (England and Wales) Order, 2007 estimated the cost (at 2006 prices) of deer impacts as follows: Vehicle collisions £114.4 million; agriculture £5,329,538; and forestry and conservation £9.5 million. There are approximately 375,000 deer in England of which 1,000 (0.27%) are Chinese water deer. Assuming that all deer have similar impacts and that those impacts are distributed evenly across the country, taking the above figures into account the total impact of the current population of Chinese water deer is approx £348,920 at the most. However, this is likely to be an overestimation. This would increase if the population were to expand.</p>
Birds	
<p>Northern goshawk, <i>Accipiter gentilis</i></p> <p>Corncrake, <i>Crex crex</i></p> <p>Common crane, <i>Grus grus</i></p> <p>Red kite, <i>Milvus milvus</i></p> <p>Red-billed cough, <i>Pyrhocorax pyrrhocorax</i></p>	<p>While some respondents to the consultation were concerned about the addition of native species to Schedule 9, most were supportive. The countryside agencies have advised that they are concerned about the unregulated release of captive bred birds and their impacts on wild populations. These species are to be added to Schedule 9 so that release can only be carried out under licence and in an appropriate manner i.e. in alignment with IUCN guidelines. This approach has proved successful with previous additions of barn owl and white tailed eagle (in Scotland).</p> <p>Costs of addition to Schedule 9: No species specific costs identified. However, there will be a cost to Natural England in the issuing of licences for reintroductions. Additionally, there will be an administration cost for licence applicants.</p> <p>Benefits of addition to Schedule 9: The addition of these species to Schedule 9 will prevent inappropriate releases which may impact on native wild populations. It will also ensure that any reintroduction programmes could only be carried out under licence, this enables countryside agencies to ensure IUCN guidelines are followed.</p>
<p>Snow goose, <i>Anser caerulescens</i></p> <p>Emperor goose, <i>Anser Canagicus</i></p> <p>Bar-headed goose, <i>Anser indicus</i></p>	<p>These species, as with other geese, can have a localised impact on habitats through damage to vegetation. They can also compete with other wildfowl for food and resources such as nest sites. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p>

Species	Rationale
<p>Barnacle goose, <i>Branta leucopsis</i></p>	<p>Benefits of addition to Schedule 9: Concentrations of large birds such as these can cause nuisance by fouling parklands, damaging riverbanks and, especially near airfields, posing a risk to aviation. British airports spend millions of pounds ensuring that flocks of birds, especially large birds, are kept away from airports and flight paths. Collisions between aircraft and birds cost the world civil aviation industry around £1.2bn a year and have resulted in the loss of 104 aircraft and more than 250 lives. (Personal communication from Dr John Allan, head of bird management at the Food and Environment Research Agency and Chair of the International Bird Strike Committee).</p> <p>A similar species, the Canada goose (see: http://www.nonnativespecies.org/01_Fact_File/05_Fact_Sheets.cfm), has seen significant population increases over the last 50 years impacting negatively upon biodiversity and human health and safety.</p> <p>These 4 goose species have been added to Schedule 9 to prevent the problems associated with these species from being further exacerbated.</p>
<p>Eagle owl, <i>Bubo bubo</i></p>	<p>A large predator with the potential to affect native species adversely. Can have an adverse impact on native raptor populations through competition and predation. A small number of successful breeding attempts have been reported in the wild.</p> <p>While most respondents to the consultation were supportive of this proposal some were of the view that this species could have established naturally arriving from mainland Europe or Scandinavia. However, the view of the British Trust for Ornithology is that they are more likely to have established due to deliberate release or escapes from captivity.</p> <p>Some stakeholders were also of the view that this is a formerly native species and as such should not be added to Schedule 9. There is uncertainty about the former presence of this species and even if it was once native to GB, it has not been part of our wildlife for some considerable time. Therefore, as with wild boar, it is sensible to restrict release to prevent negative impacts on native species and habitats.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: This is difficult to quantify as the species is currently only present in small numbers in GB. However, if this species were allowed to become established it would be likely to have negative impacts on biodiversity through predation. The non-native risk assessment for this species states: ‘The most significant impacts will be environmental, with native raptor and owl species most likely to suffer through direct predation and competition. Other native species of conservation importance, such as Curlew, Pine Marten, Red Squirrel and Capercaillie, may also suffer from predation.’</p>

Species	Rationale
	<p>See: (http://www.nonnativespecies.org/documents/RA_Bubo_bubo_(Eagle_Owl)11-09.pdf)</p> <p>Prohibiting release to the wild has the potential to benefit biodiversity by reducing the negative impacts of this species.</p>
<p>Black swan, <i>Cygnus atratus</i></p>	<p>Released individuals have hybridised with the native mute swan. An aggressive species which will out compete native wildfowl. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: There is some uncertainty about the full extent of the impacts of this species due to its small population size. Addition to Schedule 9 will help prevent further releases and subsequent potential negative impacts.</p>
<p>Monk parakeet, <i>Myiopsitta monachus</i></p>	<p>Monk parakeets are considered an agricultural pest in their native range. This species competes with native species for food and can dominate feeding areas. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: The presence of monk parakeets in England and Wales is still small and the extent of its impacts are uncertain. However, in South America this species is regarded as a serious agricultural pest and has the potential to have significant impacts on crop yields. In the USA, this species is associated with electrical fires and power cuts due to their tendency to build large communal nests on electrical utility structures. Removal of nests can be costly. In the past 5 years nest removal alone is estimated to be \$1.3 to \$4.7million (Avery <i>et al</i> (2008), <i>Diazacon inhibits reproduction in invasive monk parakeet population, Journal of Wildlife Management</i>, 72 (6) 1449 – 1452).</p> <p>Addition to Schedule 9 will help prevent further releases and subsequent negative impacts of this species.</p>
<p>Red-crested pochard, <i>Netta rufina</i></p>	<p>A rare migrant to Britain, to be added to Schedule 9 to prevent captive specimens interbreeding with wild birds. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: There is some uncertainty about the full extent of the impacts of this species due to its small population</p>

Species	Rationale
	size. Addition to Schedule 9 will help prevent further releases and subsequent potential negative impacts.
Ruddy shelduck, <i>Tadorna ferruginea</i>	<p>This species competes with other wildfowl for food and resources such as nest sites. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: There is some uncertainty about the full extent of the impacts of this species due to its small population size. Addition to Schedule 9 will help prevent further releases and subsequent potential negative impacts.</p>
Invertebrates	
<p>Australian flatworm, <i>Australoplana sanguinea</i></p> <p>Flatworm, <i>Kontikia andersoni</i></p> <p>Flatworm, <i>Kontikia ventrolineata</i></p>	<p>Flatworms predate earthworms and other beneficial invertebrates and pose a serious threat to these species, particularly in suburban areas. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified. The industry has long advised adherence to the Code of Practice to Prevent the Spread of Non-Indigenous Flatworms.</p> <p>See: http://www.fera.defra.gov.uk/plants/publications/plantHealth/documents/flatwormsCop.pdf</p> <p>Benefits of addition to Schedule 9: Adding these species to Schedule 9 will support the Code of Practice. Because flatworms are known to occur in parts of the United Kingdom, certain countries which import UK planting material have expressed concern about contamination. Therefore failure to prevent the spread of flatworms could potentially threaten UK exports. Addition of these species to Schedule 9 will help prevent further releases and subsequent negative impacts.</p>
Slipper limpet, <i>Crepidula fornicata</i>	<p>Spatial competition occurs when numerous stacks of slipper limpets prevent other seabed species from settling and through the deposition of faeces and sediments they reduce hard-surface habitat availability. Competition for food may occur with other filter feeding species, including certain bivalves. Attachment to species, including mussels and mobile species may lead to a reduction in survival, growth and reproduction of the host. On a large scale, slipper limpet stacks have been shown to disturb normal water flow, trapping fine suspended particles. Large numbers can also reduce drainage of oyster beds during ebb tides, disturbing oyster metabolism.</p> <p>Our overriding concern is to prevent the spread of this species into new areas.</p>

Species	Rationale
	<p>While most respondents to the consultation supported the proposals some respondents, including the Shellfish Association of Great Britain, were concerned about the implications of incidental transfer of this species. It is recognised that in some areas the transfer of slipper limpets with oyster spats or as part of dredging activities is an inevitable consequence of the high density of the species. It is our view that the incidental transfer of slipper limpets to areas where they are already present in large numbers will have little or no additional impact. Therefore, we would be content if the countryside agencies were to allow, under licence, the transfer of slipper limpets to areas where the species are already present and where transfer is the incidental result of a commercial activity such as aquaculture.</p> <p>Costs of addition to Schedule 9: No species specific costs identified. However, there will be a cost to Natural England in the issuing of licences for reintroductions. Additionally, there will be an administration cost for licence applicants. Where a licence has not been granted there may be compliance costs to ensure that slipper limpets are not released to the wild when moving species (e.g. oysters) for mari/aquaculture.</p> <p>Benefits of addition to Schedule 9: Loss of habitat for commercially important species may occur where this species has become established. The UK mussel and oyster fishery was estimated to be worth £39.8 million in 2007. Oyster and mussel mariculture may also be affected by fouling, reducing the value of produce and increasing cleaning and handling time. Additional costs are likely to be associated with cleaning shells fouled with slipper limpets and sorting and gathering heavily infested catches. Slipper limpet infestation may also lead to restrictions on movement of stock for growing and selling, leading to loss of revenue. Other impacts of this species such as loss of nursery and feeding habitat for commercial fish and crustacean species may be incurred. Crustaceans and whelks may be fouled by slipper limpets, decreasing their value, quality and reproductive ability.</p> <p>Addition to Schedule 9 will help reduce spread into areas where this species is not established preventing negative impacts.</p> <p>For further information on this species see: http://www.nonnativespecies.org/01_Fact_File/05_Fact_Sheets.cfm</p>
<p>Chinese mitten crab, <i>Eriocheir sinensis</i></p>	<p>This species causes significant damage to estuarine river banks through burrowing, thereby damaging habitats and flood defences. Chinese mitten crab most likely arrived in GB through the transfer of larvae in the ballast water of ships. Currently there is a well established population of this species along the Thames. The purpose of adding this species to Schedule 9 is to prevent further spread in GB through human intervention. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p>

Species	Rationale
	<p>Benefits of addition to Schedule 9: Reducing the spread of the species will prevent future costs associated with riverbank, river bed and flood defences damage, particularly in areas where the species is not currently present. Currently, the Chinese mitten crab is mostly concentrated in London and the Thames coastal basin. In 2006 the Environment Agency spent around £15,000 managing Chinese mitten crab, in Sussex and the central Anglian region in the south east of England (almost all outside the Thames region). This does not include any of the costs associated with managing the flood defences which have been compromised by mitten crabs. This species will predate a range of species leading to competition with native species. Will burrow into river banks, increasing erosion and river turbidity, and causing bank collapse. Burrowing will also lead to the siltation of gravel beds, including those used for fish spawning.</p> <p>Addition of this species to Schedule 9 will aid prevention of its spread further outside existing areas, and reduce future damage to biodiversity and flood defences and the consequent additional management costs.</p> <p>For further information on this species see: http://www.nonnativespecies.org/01_Fact_File/05_Fact_Sheets.cfm</p>
<p>Spiny-cheek crayfish, <i>Orconectes limosus</i></p> <p>Red swamp crayfish, <i>Procambarus clarkii</i></p>	<p>Justification: Non-native crayfish cause significant damage to river banks due to their burrowing behaviour which can cause collapse of the bank increasing maintenance costs. Crayfish will predate native aquatic species (including many that are popular with anglers) and thus impact on biodiversity. Non-native crayfish are also potential vectors of crayfish plague which has a serious detrimental impact upon the native white clawed crayfish.</p> <p>For risk assessments see: http://www.nonnativespecies.org/documents/RA_Orconectes_limosus_(Spiny-cheek_Crayfish)11-09.pdf</p> <p>http://www.nonnativespecies.org/documents/RA_Procambarus_clarkii_(Red-swamp_Crayfish)11-09.pdf</p> <p>The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: In 2005/6 the Environment Agency estimated it spent over £180,000 on managing the non-native signal crayfish in England. About 40% of this was on special projects in only 9 areas, so the potential cost of targeting the species more widely will be much greater. This figure does not include resources spent by other organisations and landowners on managing this species, nor does it include the additional flood management costs which the crayfish causes. The prognosis for controlling the signal crayfish is</p>

Species	Rationale
	poor. Therefore it is very important that newer arrivals such as the red swamp and spiny cheek crayfish are controlled to prevent impacts of the scale of signal crayfish. Adding these species to Schedule 9 will help to prevent future impacts on biodiversity and flood management.
American oyster drill, <i>Urosalpinx cinerea</i>	<p>A major pest of commercial oyster beds. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Listing on Schedule 9 will help prevent further spread and consequent damage to fisheries. In 1954 it was estimated that the American oyster drill was responsible for destroying over 50% of the oyster spatfall in the Essex creeks to which it is confined, although there are many other factors that affect landings. Native oyster landings are currently (average for last 5 years) about 600 tonnes per annum in England and Wales, worth about £1.8 million. Although difficult to predict, it could be expected that if this species were to become more widespread it could have significant impacts on this industry. Addition to Schedule 9 will help prevent further releases and subsequent potential negative impacts.</p>

Animals which will not be added to Schedule 9 at this time

Species	Rationale
Mammals	
Ferret, <i>Mustelo furo</i> Polecat ferret, <i>Mustelo furo x putorius</i> Common rat, <i>Rattus norvegicus</i>	<p>These species were proposed for offshore islands only. They have the potential to cause major damage to ground nesting birds and sea bird colonies on islands. Most respondents to the consultation supported the addition of these species to Schedule 9. However, in general these species are neither deliberately released or allowed to escape on offshore islands in England and Wales. For rats, establishment on islands is most likely to occur due to unintentional transfer from ships. In such circumstances we do not think that it is likely that section 14 would apply. Additionally, the majority of offshore islands of conservation concern are protected sites or are managed by conservation agencies or charities, and therefore release is highly unlikely.</p> <p>Costs of addition Schedule 9: As the legislation is unlikely to result in any tangible benefit it would be poor regulation to add these species to the Schedule.</p> <p>Benefits of addition to Schedule 9: No benefits have been identified over and above controls which are already in existence.</p>
Birds	
Rosev-faced lovebird.	Subsequent to the consultation JNCC have revised their advice and are

Species	Rationale
<p><i>Agapornis roseicollis</i></p> <p>Blue-crowned parakeet, <i>Aratinga acuticaudata</i></p>	<p>now of the view that these species are not ordinarily resident in GB therefore release is already prohibited under Section 14 1(a) and addition to Schedule 9 is unnecessary.</p> <p>Costs/Benefits of addition to Schedule 9: Not applicable as these species have been excluded for legislative not economic reasons.</p>
<p>Helmeted guinea fowl, <i>Numidia meleagris</i></p>	<p>Used as a sentinel species in game rearing and livestock keeping to warn of predators. In their consultation response BASC have advised that this species has been present in the wild in GB for over a century. While helmeted guinea fowl have been shown to breed in the wild in GB there is no evidence of the species being invasive. Therefore, given this uncertainty and the potential impacts on the game shooting industry of restricting its use as a sentinel species, it will not be added to the Schedule at this time.</p> <p>Costs of addition to Schedule 9: As this species is used in game rearing, listing the species on Schedule 9 would have disproportionate impacts on game shooting particularly as this species has not been shown to be invasive.</p> <p>Benefits of addition to Schedule 9: None identified.</p>
<p>Green pheasant, <i>Phasianus versicolor</i></p>	<p>Although most respondents agreed with the addition of the species to Schedule 9, a number opposed its addition to the Schedule on the grounds of the economic impact this would have. This is because the species has been widely used in the game shooting industry, and as such most pheasants released in GB have some green pheasant lineage. Despite its widespread release there is little evidence of any negative impacts on native biodiversity. As such, listing this species in Schedule 9 would have minimal benefit while severely impacting upon a legitimate activity.</p> <p>Costs of addition to Schedule 9: This species is widely used in the game rearing industry, addition of this species to Schedule 9 will have significant negative impacts on this legitimate activity.</p> <p>Benefits of addition to Schedule 9: None identified</p>
<p>Freshwater Fish</p>	
<p>Black bullhead, <i>Ameiurus melas</i></p> <p>Grass carp, <i>Ctenopharyngodon idella</i></p> <p>Sunbleak, <i>Leucaspis delineates</i></p> <p>Topmouth gudgeon, <i>Pseudorasbora parva</i></p>	<p>Advice from colleagues in CEFAS is that the release and possession of freshwater fish is adequately controlled under the Import of Live Fish (England and Wales) Act 1980. Addition to Schedule 9 adds no further beneficial controls on the release of these species.</p> <p>Costs/Benefits of addition to Schedule 9: Not applicable as these species have been excluded for legislative not economic reasons.</p>
<p>Invertebrates</p>	

Species	Rationale
American hard-shelled clam, <i>Mercenaria mercenaria</i>	<p>There is some uncertainty over whether this species is invasive. Additionally, the small population present in the Solent is exploited by a small fishery. To ensure a proportionate response that does not unnecessarily impact on the livelihoods of those who fish this species, a risk assessment will be commissioned to establish its invasiveness, before any decision is made. Given the time scales involved these species will not be included in the proposed April 2010 Order.</p> <p>Costs of addition to Schedule 9: Prohibiting the release of this species will prevent the release of undersized animals back to the wild, therefore impacting negatively on the small fishery which targets this species. The market price of these clams is currently about £5-6 per kilo which gives an annual value of £120,000 from about 20 tonnes of wild and farmed clams.</p> <p>Benefits of addition to Schedule 9: It is uncertain what, if any, impacts this species has and therefore it is not possible to quantify the benefits of adding this species to Schedule 9.</p>

Animals to be removed from Schedule 9.

Species	Rationale
Mammals	
Crested porcupine, <i>Hystrix cristata</i> Himalayan porcupine, <i>Hystrix hodgsonii</i>	<p>Advice from JNCC is that these species do not occur in the wild in GB; therefore, these species are not considered ordinarily and release is prohibited under section 14(1)(a). The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be removed from the Schedule.</p> <p>Costs of removal to Schedule 9: These species are not ordinarily resident in GB and as such release to the wild is already prohibited under Section 14 1(a). Therefore there is no cost associated with removal from Schedule 9.</p> <p>Benefits of removal from Schedule 9: Removal of these species ensures consistent application of the legislation and prevents any misunderstanding or confusion.</p>
Coypu, <i>Myocaster coypus</i>	<p>This species has been eradicated in GB and as a result is no longer considered ordinarily resident; therefore, release is prohibited under section 14(1)(a). The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be removed from the Schedule.</p> <p>Costs of removal to Schedule 9: This species is not ordinarily resident in GB and as such release to the wild is already prohibited under Section 14 1(a). Therefore, there is no cost associated with removal from Schedule 9.</p> <p>Benefits of removal from Schedule 9: Removal of this species</p>

Species	Rationale
	ensures consistent application of the legislation and prevents any misunderstanding or confusion.
Mongolian gerbil, <i>Meriones unguiculatus</i>	<p>Although consultation responses indicated that there is some anecdotal evidence of a small population on allotments in London, we do not consider this species ordinarily resident in GB; therefore, release is prohibited under section 14(1)(a). The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be removed from the Schedule.</p> <p>Costs of removal to Schedule 9: This species is not ordinarily resident in GB and as such release to the wild is already prohibited under Section 14 1(a). Therefore, there is no cost associated with removal from Schedule 9.</p> <p>Benefits of removal from Schedule 9: Removal of this species ensures consistent application of the legislation and prevents any misunderstanding or confusion.</p>
Cervus and hybrids thereof (with respect to the Outer Hebrides and the islands of Arran, Islay, Jura and Rum.	<p>Justification: Refers to Scottish Islands. As conservation is a devolved issue it is no longer appropriate for this to be listed in Schedule 9 (in its application to England and Wales). The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this entry should not be removed from the Schedule as it applies in England and Wales.</p> <p>Costs/Benefits of removal from Schedule 9: Not applicable these species are to be removed for legislative reasons.</p>
Birds	
Bobwhite quail, <i>Colinus virginianus</i> Budgerigar, <i>Melopsittacus undulatus</i>	<p>These species are not considered ordinarily resident in GB; therefore, release is prohibited under section 14(1)(a). The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be removed from the Schedule.</p> <p>Costs of removal to Schedule 9: These species are not ordinarily resident in GB and as such release to the wild is already prohibited under Section 14 1(a). Therefore there is no cost associated with removal from Schedule 9.</p> <p>Benefits of removal from Schedule 9: Removal of these species ensures consistent application of the legislation and prevents any misunderstanding or confusion.</p>

Plants to be added to Schedule 9

Species	Rationale
Few flowered leek, <i>Allium paradoxum</i>	Introduced through cultivation and now widely escaped spreading through inappropriate disposal of garden material, action of water bodies and exchange of specimens between gardeners. These species

Species	Rationale
<p>Three cornered garlic, <i>Allium triquetrum</i></p>	<p>adversely affect native species through direct competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>For <i>A.triquetrum</i> risk assessment see: http://www.nonnativespecies.org/documents/RA_Allium_triquetrum_(Three-cornered_Leek)11-09.pdf</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Water fern, <i>Azolla filiculoides</i></p> <p>Floating pennywort, <i>Hydrocotyle ranunculoides</i></p> <p>New Zealand pygmyweed, <i>Crassula helmsii</i></p>	<p>Established in slowing moving and static water bodies due to inappropriate disposal of aquarium/pond material, movement by water bodies and transfer by animals. These species out-compete native species by forming a dense covering on the surface of the water. These mats impact on biodiversity by, blocking out light, causing de-oxygenation, preventing air-breathing insects from reaching the surface and reducing water temperatures. Dense infestations can be mistaken for land and pose a safety risk to children, livestock and other animals. Can exacerbate flood risk by blocking channels, weirs and other structures. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: The management costs of these species, especially floating pennywort, are significant. In 2005/6 the Environment Agency spent £35,000 on projects relating specifically to floating pennywort. This does not include the wider staff costs in dealing with this species, which as a percentage average would be about 260 staff days (about £65,000). This gives a total of about £100,000 in one year on floating pennywort alone. A £17,000 partnership project to eradicate the pennywort is being run by the Norfolk Non-native Species Initiative with funding and support from the Environment Agency and the Broads Authority. Defra has also provided financial support. There are also many others using and spending significant resources on dealing with invasive waterweeds. British Waterways estimates it spends approximately £365,000 p.a. on managing aquatic waterweeds, with £50,000 dealing just with floating pennywort on primarily two river navigations, as well as about £10,000 on water fern.</p> <p>Once introduced to a site New Zealand pygmy weed takes just three to five years to dominate it. The Environment Agency spent over £30,000 in 2006 providing advice on the management of pygmy weed, and around £10,000 on water fern. The costs of removing them are much greater.</p>

Species	Rationale
	<p>Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Carolina water-shield, <i>Cabomba caroliniana</i></p> <p>Giant salvinia, <i>Salvinia molesta</i></p>	<p>Although these species are not widely established in the wild, non-native aquatic plants have the potential to be amongst the most problematic of invasive species due to their impacts and the difficulties in achieving effective management. Produces dense stands which can compete directly with native species and which can exacerbate flood risk. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: As for other aquatic plants, addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Hottentot fig, <i>Carpobrotus edulis</i></p>	<p>Established in the wild due to deliberate planting and indirectly through disposal of garden waste. Out-competes native species, a particular problem in the South West of England. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: A key lesson from the EU Life project <i>Conservation of areas with threatened flora in the island of Minorca</i>. quoted in <i>Hottentot Fig Invasive Species Action Plan</i> (Invasive species Ireland) highlighted how early action minimises long term impact and costs.</p> <p>See: http://www.invasivespeciesireland.com/files/public/Management%20contingency/Carpobrotus%20edulis%20Invasive%20Species%20Action%20Plan.pdf</p> <p>Hottentot fig is currently limited to the South West of England Addition of this species to Schedule 9 will help to prevent future spread and associated negative impacts.</p>
<p><i>Crocosmia x crocosmiiflora</i></p>	<p>The consultation proposed listing all <i>Crocosmia</i> species; however, responses to the consultation opposed listing whole genera and held the view that only invasive species should be added to the Schedule. Advice from JNCC and key stakeholders indicated that only the hybrid <i>Crocosmia x crocosmiiflora</i> is of concern. However, the Royal Horticultural Society advised that the taxonomy of this species is unclear and a range of non-invasive cultivars are also labelled as <i>Crocosmia x crocosmiiflora</i>. Listing this species only prohibits planting or causing to grow in the wild, an activity which will not apply to any of the cultivars in most instances. Therefore, it is proportionate to list <i>Crocosmia x crocosmiiflora</i> to limit the spread of the most invasive cultivars despite the fact that a number of non-</p>

Species	Rationale
	<p>invasive cultivars will be captured by the legislation.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>
<p>Cotoneasters:</p> <p><i>Cotoneaster bullatus</i>,</p> <p><i>Cotoneaster microphyllus</i>,</p> <p><i>Cotoneaster horizontalis</i>,</p> <p><i>Cotoneaster simonsii</i>,</p> <p><i>Cotoneaster integrifolius</i></p>	<p>Cotoneaster species are widely planted in gardens and in amenity planting. The consultation proposed listing all cotoneaster species; however, responses to the consultation opposed listing whole genera. Respondents held the view that only invasive species should be added to the Schedule particularly as cotoneasters are used in gardening and amenity planting. Therefore, only those 5 species which JNCC and other key stakeholders have advised as being particularly invasive are to be added to Schedule 9 at this time. These species have colonised many dry habitats, particularly limestone sites (such as the Avon Gorge) and coastal areas and have proven difficult to eradicate.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Purple dewplant, <i>Disphyma crassifolium</i></p>	<p>This species has become established on walls, cliffs and sandy places in coastal areas and can adversely affect native species through competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>
<p>Water hyacinth, <i>Eichhornia crassipes</i></p> <p>Water lettuce, <i>Pistia stratiotes</i></p>	<p>Although these species do not overwinter in GB they are highly invasive in other countries. Some respondents were opposed to the inclusion of these species on this basis. However, given climate change predictions, it is prudent to add these species to Schedule 9 to prevent potential future impacts. The proposal was supported by most respondents to the consultation.</p> <p>Risk assessment for <i>E.crassipes</i>: http://www.nonnativespecies.org/documents/RA_Eichhornia_crassipes_(Water_Hyacinth)11-09.pdf</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Given the experience of other countries and the costs involved in managing other invasive non-native aquatic plant species, addition to Schedule 9 will help prevent future establishment of these species and subsequent negative impacts.</p>

Species	Rationale
<p>Elodea species</p> <p>Curly waterweed, <i>Lagarosiphon major</i></p> <p>Parrots feather, <i>Myriophyllum aquaticum</i></p>	<p>These species have been spread to the wild due to discards from ponds and aquaria. These species can overwhelm ponds, out-compete native vegetation, choke up waterways and exacerbate flood risk. Dense stands can impact upon recreational activities such as fishing, boating and swimming. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: In 2006, the Environment Agency spent over £20,000 on the elodea species, £10,000 on parrot's feather, and about £3,000 on curly waterweed providing advice on the management of these species. Management costs are significantly greater. Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Hybrid knotweed, <i>Fallopia japonica x sachalinensis</i></p> <p>Giant knotweed, <i>Fallopia sachalinensis</i></p>	<p>In addition to the more common Japanese knotweed (<i>Fallopia japonica</i>), which seriously impacts on biodiversity, these species adversely affect native species through direct competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Japanese knotweed has long become too well established and widespread to be eradicated, and even if it could be, the costs of doing so would be prohibitive (estimated at £1.56 billion). Harm caused by other knotweed species is potentially similar. The financial and biodiversity advantages of adding other related knotweed species to Schedule 9 to try to minimise their spread are therefore clear.</p>
<p>Giant rhubarb, <i>Gunnera tinctoria</i></p>	<p>This species is increasingly popular as a garden plant and can establish in the wild due to inappropriate disposal of garden material. The species adversely affects native species through direct competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>
<p>Himalayan balsam, <i>Impatiens glandulifera</i></p>	<p>First introduced as a garden plant this species has become established in the wild through natural spread and inappropriate disposal of garden material. There has been some anecdotal evidence of deliberate planting in the wild due to its attractive appearance. The species adversely affects native species through direct competition, with large stands excluding other species. The proposal was supported by most respondents to the consultation and no significant concerns were raised</p>

Species	Rationale
	<p>that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule9: The Environment Agency spent over £73,000 in 2005 managing this species, and another £32,000 on specific removal projects in just 6 areas. Given the widespread distribution of this species, the costs of management have the potential to be significant. Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>
<p>Variegated yellow archangel, <i>Lamiastrum galeobdolon argentatum</i></p>	<p>Often found in the wild where garden plants have been disposed of inappropriately. The species adversely effects native species through competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9 : This species has the potential to be very invasive if allowed to spread, impacting directly on native biodiversity. Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>
<p>Water primrose <i>Ludwigia grandiflora</i></p> <p>Floating water primrose, <i>Ludwigia peploides</i></p> <p>Water primrose, <i>Ludwigia uruguayensis</i></p>	<p>Highly invasive species that are spreading in continental Europe, especially France. Dense stands impact upon native biodiversity, recreational activities and can exacerbate flood risk through the blocking of channels, weirs and other structures. The limited populations in GB are currently subject to an eradication programme. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: In France in 2006, it was estimated that the cost per m³ (cubic metre) to remove <i>Ludwigia</i> averaged €145 (about £140). The management costs nationally therefore are huge. In GB the aim is to eradicate <i>Ludwigia</i> while the species is still limited in its distribution and thus avoiding the potential management costs of the scale seen in France. Addition to Schedule 9 will help prevent further establishment of these species and will support the eradication programme.</p>
<p>False virginia creeper, <i>Parthenocissus inserta</i></p> <p>Virginia creeper, <i>Parthenocissus quinquefolia</i></p> <p>Japanese rose, <i>Rosa rugosa</i></p>	<p>Although most respondents supported the addition of these species, a number were opposed due to the impact on horticulture. However, the purpose of the Schedule is to prevent the species becoming established in the wild; it does not necessarily restrict the use of species in gardening. These species were first introduced as garden plants and have become established in the wild through inappropriate disposal of garden material. These species adversely affect native species through competition.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p>

Species	Rationale
	<p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
<p>Yellow azalea, <i>Rhododendron luteum</i></p> <p>Rhododendron, <i>Rhododendron ponticum</i></p> <p>Rhododendron, <i>Rhododendron ponticum</i> x <i>Rhododendron maximum</i></p>	<p>Although most respondents supported the addition of these species, a number were opposed due to the impact on horticulture. However, the purpose of the Schedule is to prevent the species becoming established in the wild; it does not necessarily restrict the use of species in gardening. Planted extensively in the wild for ornament and game cover, these species cause significant damage to natural habitat, as well as competing directly with native species. These species are a potential host for <i>Phytophthora ramorum</i>, the cause of sudden oak death.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Significant resources and volunteer time are expended in the control of Rhododendron and <i>R.ponticum</i> in particular. Taking this and the negative impacts of the species into account, addition to Schedule 9 is necessary to help reduce further spread of these species to the wild. However, given that rhododendron species are fairly widespread this benefit is likely to be minimal. The greatest benefit will be to local management projects as prohibiting planting in the wild will help to minimise re-establishment of the species where control has taken place.</p>
<p>Duck potato, <i>Sagittaria latifolia</i></p> <p>Perfoliate alexanders, <i>Smyrniium perfoliatum</i></p>	<p>These species have the potential adversely to affect native species through competition. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that these species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of these species and subsequent negative impacts.</p>
Algae	
<p>Green seafingers, <i>Codium fragile</i></p>	<p>Initially introduced by man this species has since been dispersed around the British coast. This species adversely affects native seaweeds through competition. While <i>Codium fragile tomentosoides</i> is already listed in Schedule 9, other sub-species also have the potential to be invasive. Listing the species name will ensure all that all non-native sub-species are covered by the legislation. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>

Species	Rationale
Red algae, <i>Grateloupia luxurians</i>	<p>Possibly introduced with oysters, and causing damage to natural habitats where it has become established. Could potentially compete with native species. The proposal was supported by most respondents to the consultation and no significant concerns were raised that mean that this species should not be added to the Schedule.</p> <p>Costs of addition to Schedule 9: No species specific costs identified.</p> <p>Benefits of addition to Schedule 9: Addition to Schedule 9 will help prevent further establishment of this species and subsequent negative impacts.</p>

Plants which will not be added to Schedule 9 at this time

Species	Rationale
Shallon, <i>Gaultheria shallon</i>	<p>Although most respondents were supportive of the addition of this species, concerns were raised over the impacts on the horticulture industry of doing so. This species is predominantly planted as cover and as a food source for game birds and as such is planted in the wild. As the species is primarily sold for this purpose prohibiting planting in the wild would be tantamount to a ban on sale of this species. As such, it is reasonable to expect a more robust evidence base in line with that required for ban on sale provisions. Consideration of whether this species should be added in the future will be dependent on the outcome of the non-native species risk assessment that has been commissioned.</p> <p>Costs of addition to Schedule 9: The Royal Horticultural Society has expressed doubts about the invasiveness of this species. In light of this uncertainty, addition of this species to the Schedule could have a disproportionate impact on those businesses which supply this plant to the game industry.</p> <p>Benefits of addition to Schedule 9: Given the uncertainty over the invasiveness of this species the benefits of addition to the Schedule are unclear.</p>
Sea buckthorn, <i>Hippophae rhamnoides</i>	<p>Although there was support for the addition of this species to Schedule 9 the inclusions of native plant species was raised as a concern by a number of respondents. Following further discussions with stakeholders it has also become clear that defining its natural range would be problematic to the extent that adding it to Schedule 9 would be create an impractical enforcement situation.</p> <p>Costs of addition to Schedule 9: It has proven difficult to identify the natural range of this species, therefore the implications of addition to the Schedule are equally difficult to define.</p> <p>Benefits of addition to Schedule 9: There could be potential benefits to native species through preventing the planting of this species in inappropriate areas, however, the natural range of this species is not easily identifiable.</p>

Species	Rationale
<p>Turkey oak, <i>Quercus cerris</i></p> <p>Evergreen oak, <i>Quercus ilex</i></p> <p>False acacia, <i>Robinia pseudoacacia</i></p>	<p>While the majority of respondents to the consultation supported the proposals there was a large amount of opposition due to the value of the species to amenity planting and forestry. Additionally, given the likely impacts of climate change the Forestry Commission is considering the potential use of species such as these as part of its forestry planning strategy. To provide greater clarity a non-native species risk assessment will be commissioned to establish their invasiveness. Given the time scales involved these species will not be included in the proposed April 2010 Order.</p> <p>Costs of addition to Schedule 9: Addition of these species to the Schedule would prohibit planting in the wild and as such the Forestry Commission and/or Foresters would be required to apply for licences should they wish to investigate these species for climate change mitigation and adaptation. Given the potential impacts of climate change on forestry planning it is essential that there is robust evidence if these species are to be removed from FC's armoury. Therefore, non-native risk assessments have been commissioned to enhance the evidence base and to ensure a decision on these species is proportionate.</p> <p>Benefits of addition to Schedule 9: All three species have the potential to be invasive principally impacting on native biodiversity. Addition to Schedule 9 would help prevent further establishment of these species and the potential negative impacts.</p>

Annex B: Specific Impact Tests

1. Small Firms Impact Test (see above).

2. Competition Impact Assessment : There will be no impacts on competition, as there are no suppliers. The proposals will apply to everyone equally.

3. Legal Aid Impact Test : The Legal Aid impact is likely to be negligible. The proposals will increase the number of species the release of which will be an offence. However, with the attendant publicity promoting the changes and the awareness raised by the consultation, and also given its positive responses, compliance is likely to be high. Thus consequent legal enforcement actions are likely to be small, and the implications for legal aid negligible.

4. Sustainable Development Policy : A major objective of the proposals is the protection of biodiversity. This actively supports sustainable development policy. Living within Environmental Limits is one of the Government's Five Principles of Sustainable Development. Biodiversity is recognised as one of the basic resources needing protection as a natural resource within this Principle. (see <http://www.defra.gov.uk/sustainable/government/what/principles.htm>)

5. Carbon Impact Assessment : Given that the objective of the proposals is to prevent the release of invasive species into the wild, there will be no consequential carbon emissions. Indeed, given the likelihood indicated above of time and cost savings from not having to deal with the potential adverse consequences of such releases, there may be marginal carbon savings from the resources targeted toward management.

6. Other Environmental Impact Assessment : Since the aim of the proposals is the enhancement of the natural environment, the proposals will undoubtedly have a positive environmental impact.

7. Health Impact Assessment : This relates to impacts on human health and well-being. Given the nature of the proposals to restrict release of certain species, any human health impacts will be positive. There are likely to be positive benefits to the well-being of people by the increased enhancement and maintenance of biodiversity.

8. Race, Disability and Gender Equality Impact Assessments : No impacts.

9. Human Rights : It is not envisaged that the proposals would have any impact on human rights. Most human rights are limited or qualified rights. The European Convention on Human Rights lists the right to peaceful enjoyment of possessions as a qualified right, and under Article I Protocol I of the Convention the use of property can be regulated by the state. The proposals will not affect this because there will be no restriction on the keeping and breeding of species listed on Schedule 9. The prohibition relates only to the release of such species or allowing them to escape into the wild.

10. Rural Proofing : The proposals are universal and will apply equally in urban and rural areas.